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of Transportation

**National Highway
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Division of Arvin/Calspan
[REDACTED] New York [REDACTED]

CALSPAN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION

CALSPAN CASE NO. 91-12

FLEET - 1990 DODGE SHADOW

LOCATION [REDACTED]

ACCIDENT DATE - [REDACTED] 1991

Contract No. DTNH22-87-C-27169

Prepared for:

U.S. Department of Transportation
National Highway Traffic Safety Administration
Washington, D.C. 20590

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points be coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

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16. Abstract This on-site investigation focused on a 1990 Dodge Shadow that was involved in a center frontal impact sequence with a utility pole which deployed its supplemental driver air bag system. The vehicle was driven by a 36 year old female, 63", 104-120 lbs., with a history of epilepsy. She was wearing the active 3-point lap and shoulder belt system. The vehicle was traveling westbound on a rural two lane state route in a 35 mph speed zone. The driver apparently suffered an illness or had fallen asleep as the vehicle descended a hill and departed the left edge of the roadway. The left front corner area of the vehicle impacted two 4x6" concrete fence posts resulting in minor damage to the vehicle. The center frontal area of the Dodge Shadow subsequently impacted a 10" diameter utility pole that was located 5'9" west of the second fence post and 8'2" outboard of the south road edge. The 12 o'clock direction of force impact resulted in a velocity change of 14.4 mph (14.5" of bumper crush) which deployed the vehicle's supplemental driver air bag system. The driver was presumably against, or within a close proximity of the steering assembly as the air bag deployed. She engaged the deploying air bag and steering assembly which resulted in bilateral rib fractures, multiple soft tissue contusions, a ruptured spleen, and a ruptured abdominal aorta. She was subsequently thrust into the left front seat back by the air bag which resulted in ecchymosis of the posterior aspect of the heart and extensive subarachnoid hemorrhage. The driver was transported to a local hospital where she expired 4 hours after the crash.					
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CALSPAN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION

CALSPAN CASE NO. 91-12
FLEET - 1990 DODGE SHADOW
LOCATION - [REDACTED]

SUMMARY

This crash occurred on a state route in a rural/residential area on [REDACTED] 1991, at 2317 hours in [REDACTED]. At the time of the crash, the asphalt road surface was dry and the weather was clear. The involved vehicle was a 1990 Dodge Shadow 4 dr. sedan (V.I.N.: [REDACTED]), with an odometer reading of 18,052 miles. The Dodge Shadow was equipped with a driver's side air bag system that deployed during the crash sequence. The vehicle was owned and driven by a 36 year old female with a reported height of 63.7" and a weight estimated at 104-120 lbs. She also had a history of epilepsy and was on medication (Dilantin) to control the illness.

The vehicle was traveling in a westerly direction on the state route at an unknown, but reasonable rate of speed. The posted speed limit in the area was 35 mph. As the driver descended a hill, she either suffered from an illness (possible seizure) or had fallen asleep. The vehicle subsequently drifted to the left and gradually departed the left (south) road edge in a tracking mode. The vehicle continued forward on the grassy area that bordered the south road edge for a police reported distance of 56 ft. on a travel path that nearly paralleled the road edge.

The left front corner area of the vehicle sideswiped a 4 x 6" concrete fence post that was located 8'2" outboard of the south road edge. The impact fractured the post and produced sideswipe type damage that extended 23.75" rearward on the left front fender. The minor 12 o'clock direction of force impact produced minor damage to the vehicle and did not alter its trajectory. The vehicle continued forward and impacted a second concrete fence post that was located 10 ft. west of the first struck post. Direct contact damage extended 5" inboard of the left front corner onto the bumper fascia. The impact fractured the fence post and separated the corner area of the bumper fascia from the vehicle. Although the extent of frontal crush from the fence post impact was unknown (due to the subsequent center frontal utility pole impact), it was doubtful that the impact resulted in a sufficient longitudinal deceleration required to deploy the vehicle's driver air bag system.

The Dodge Shadow continued forward and impacted a 10" diameter wooden utility pole that was located 5'9" west of the 2nd struck fence post and 6'4" south of the south road edge. The impact involved the front bumper, grille, and hood of the vehicle with the direct contact damage extending 1.75-8.25" left of the vehicle's center line. Impact speed for the pole impact was computed at 16.0 mph by the damage and trajectory mode of the CRASHPC program. As a result of the 12 o'clock direction of force impact, the vehicle underwent a longitudinal deceleration of 14.4 mph that was of sufficient magnitude to deploy the driver air bag system. Maximum frontal crush was 14.5" located on the bumper 4.75" left of center. The impact deformed the entire width of the bumper resulting in a induced and direct contact damage length of 48" (bumper corner to bumper corner). Crush values at bumper level were as follows: C₁=0.25", C₂=5.75", C₃=13.25", C₄=7.4", C₅=2.25", C₆=0.0".

SUMMARY (CONT'D.)

The driver of the Dodge Shadow had her seat adjusted to a forward position and the tilt steering column set to the center adjustment point. She was wearing the active 3-point lap and shoulder belt system. Belt usage was determined from snag marks found on the belt webbing that were probably produced by a stick pin jewelry item that was fastened to the left side of her dress. The investigating police officer noted the belt fastened around the driver as he arrived on-scene within seconds of the crash. At impact with the utility pole, the driver was presumably slumped forward against, or within a close proximity of the steering wheel. She initiated a forward trajectory in response to the center frontal impact and engaged the deploying air bag, which resulted in contusions over both eyelids (AIS-1), abrasions with contusions to the underside area of the chin (AIS-1), abrasions of the anterior neck (AIS-1), contusions of the right anterior neck (AIS-1), and contusions over the outer area of both breasts (AIS-1). Her loading force was transmitted through the air bag and into the steering assembly which deformed the upper rim 0.25" forward and compressed the energy absorbing steering column 1.6" (shear capsule separation). As a result of her involvement with the deploying air bag and loading of the steering assembly, the driver sustained multiple bilateral rib fractures (AIS-4), a rupture of the abdominal aorta (AIS-5), and a ruptured spleen with extensive retroperitoneal hemorrhage (AIS-3). The driver loaded the shoulder belt webbing during her forward trajectory which contused the left anterior shoulder (AIS-1) and produced abrasions with contusions to the left side of her neck (AIS-1). The driver's knees loaded the knee bolster which produced a nylon stocking transfer to the left side of the bolster. She sustained two lacerations of the right knee (AIS-1) and a contusion over the left knee (AIS-1) from bolster contact.

The driver was subsequently thrust rearward into the seat back by the deploying air bag. As a result, the posterior aspect of her heart impacted the back of the chest which resulted in ecchymosis of the posterior aspect of the heart (AIS-3). Her head probably rotated over the seat back, which resulted in an extensive subarachnoid hemorrhage (AIS-3) from hyperextension of the head.

The vehicle came to rest against the struck pole facing in a westerly direction. The driver slumped to her right and probably snagged the belt webbing with the jewelry pin which ripped the front of her dress. She slid out of the shoulder belt webbing and came to rest with her head and torso resting on the right front seat cushion.

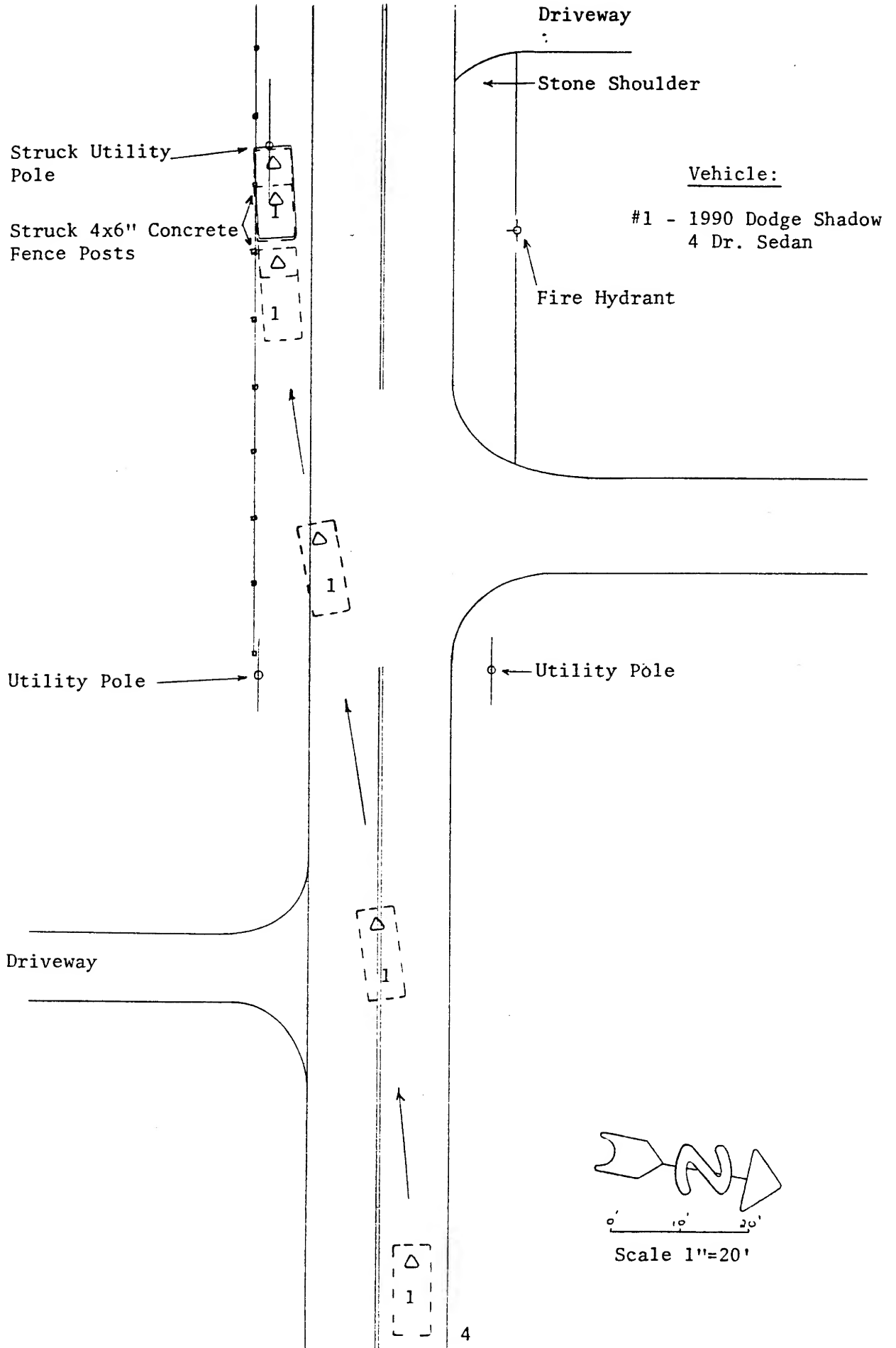
The investigating police officer was conducting a criminal investigation several hundred feet down the road. He heard the impact and noted the tail-lights of the vehicle off-road. The officer immediately responded to the crash scene and found the driver slumped across the interior of the vehicle. He and his partner noted the interior of the vehicle was filled with a smoke-like substance. The partner used his flashlight to shatter the left rear door window to gain access to the vehicle and driver. They noted that she was breathing, but not moving within the vehicle. The officer immediately called for fire and rescue assistance. The driver was subsequently removed from the vehicle and transported to a local hospital where she expired at 0323 hours following surgery for removal of her spleen.

SUMMARY (CONT'D.)

The deployed air bag was approximately 23" in diameter and was vented by two 1 1/8" ports located within the 12 o'clock sector on the back side of the bag (away from the driver). The air bag was not tethered and was not damaged during the deployment and crash sequence. The outer module flap opened at the designated tear points in an H configuration. The upper and lower flaps were symmetrical in size with a vertical measurement of 2.5" and a horizontal width of 6.75". There was no gas generant residue on the bag or at the radial ports of the inflator.

The NHTSA COTR notified the National Transportation Safety Board of the U.S. Department of Transportation's involvement in this crash.

Accident Schematic
Calspan Case No.91-12



CALSPAN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION

CALSPAN CASE NO. 91-12

FLEET - 1990 DODGE SHADOW
LOCATION - [REDACTED]

ACCIDENT DATA

Location: Rural state route
City/Township: [REDACTED]
Area/Type: Rural Residential
Accident Date/Time: [REDACTED], 1991, 2317 hours
Investigating Police Agency: [REDACTED] State Police
Accident Type: Car/Utility pole, center frontal impact
Air Bag Vehicle
Driver Injury Severity: Critical (AIS-5)

AMBIENCE

Viewing Conditions: Dark, unlighted
Weather: Clear
Precipitation: None
Road Surface: Dry

HIGHWAY

Type: State route
Number of Lanes: 2
Width: 20'6"
Surface: Asphalt
Median: None
Edge: North edge - 9' stone shoulder
South edge - Grass shoulder

HIGHWAY (CONT'D.)

Vertical Alignment:	Sag at POI
Horizontal Alignment:	Straight
Estimated Coefficient of Friction:	Road Surface - .65 Off-road surface - .55
Traffic Density:	No other traffic at the time of the crash

TRAFFIC CONTROLS

Signals:	None
Signs:	No pertinent signs
Markings:	Yellow full barrier center lines, solid white edge lines
Speed Limit:	35 mph

VEHICLE

Description:	1990 Dodge Shadow, 4 dr. hatchback
V.I.N.:	1B3XP48K5LN (production number deleted)
Color:	White
Odometer:	18,052 miles
Engine:	4 cylinder, 2.5 liter
Transmission:	3-speed automatic, console mounted transmission selector lever
Steering:	Power assisted rack and pinion
Brakes:	Power assisted front disc, rear drum
Padding:	Upper and mid instrument panel, headliner, sunvisors, soft edged steering wheel rim and air bag module cover, door panels, door armrests, adjustable head restraints
Active Restraints:	3-point continuous loop lap and shoulder belts without slack adjusters in the four outboard seated positions, center rear lap belt

VEHICLE (CONT'D.)

Passive Restraints: Supplemental driver air bag system that deployed at impact with the utility pole

Defects: None

Tow Status: Towed due to damage

VEHICLE DAMAGE

Exterior: The 1990 Dodge Shadow was involved in a gradual left side road departure and subsequently impacted two 4 x 6" concrete fence posts and a 10" diameter wooden utility pole. Based on damage to the vehicle and inspection of the crash scene, the vehicle's driver air bag system probably deployed at impact with the utility pole.

The left front corner area of the vehicle initially side-swiped the first fence post that was located 8'2" south of the south road edge. Damage to the vehicle was minimal which involved a shallow dent to the front third of the left front fender with paint abrasions. The damage extended 23.75" rearward on the fender before ending at a point 7.75" forward of the left front axle. The left front tire probably impacted the fence post which resulted in an airout of the tire. There was no visible damage to the tire or alloy wheel.

The vehicle continued forward and impacted a second concrete fence post with the left corner area of the front bumper. Direct contact damage began at the bumper corner and extended 5" inboard onto the bumper fascia. The concrete post impacts separated the left corner wrap-around of the bumper fascia. The extent of bumper crush was minimal, but unknown due to the bumper displacement from the utility pole impact.

The center frontal area of the Dodge Shadow impacted the 10" diameter utility pole which resulted in moderate damage to the vehicle. Maximum crush was 14.5" located on the bumper reinforcement bar 4.75" left of center. Direct contact damage on the bumper fascia began 26.25" inboard of the right corner and extended 8.75" to the left. The impact deformed the entire width of the front bumper reinforcement bar resulting in a combined induced and direct contact damage length (Field L) of 48.0". Crush values at bumper level were as follows: $C_1=0.25"$, $C_2=5.75"$, $C_3=13.25"$, $C_4=7.4"$, $C_5=2.25"$, $C_6=0.0"$.

VEHICLE DAMAGE (CONT'D.)

Exterior
(Cont'd.): Components damaged by the utility pole impact included the bumper fascia, bumper reinforcement bar, grille, hood, radiator support panel and the radiator and air conditioning condensor. Rescue personnel opened the right front door beyond its normal limits which damaged the right front fender, leading edge of the door, and the door hinges. All doors remained closed and were fully operational post-crash.

CDC:	<u>Event No.</u>	<u>CDC</u>	<u>Object Struck</u>
	3	12-FCEN-2	10" diameter wooden utility pole
	2	12-FLEE-1	4x6" concrete fence post
	1	12-FLES-3	4x6" concrete fence post

Repair Cost: Total loss per insurance company

Interior: The interior of the Dodge Shadow sustained minor damage that was associated with air bag deployment and driver contact with interior components. As the air bag deployed, its deployment space was limited by the forward position of the driver. Her subsequent loading force was transmitted through the bag and into the steering assembly which deformed the upper steering wheel rim approximately 0.25" forward. The driver's loading force, in probable combination with air bag deployment, compressed the energy absorbing steering column 1.6". Shear capsule compression was measured at 1.375" on the left unit and at 1.6" on the right. The right shear bracket was completely disengaged from the block.

The driver's knees contacted the rigid knee bolster which resulted in injury to both knees; however, only the left knee produced contact evidence. A nylon stocking transfer was noted to the fuse box cover 17.75-19.75" left of center and 15-17" below the upper instrument panel.

The driver was wearing the active 3-point lap and shoulder belt system at impact; however, due to her forward position, did not sufficiently load the belt webbing. There were no load induced stretch marks on the belt webbing or at the B-pillar mounted D-ring. The latchplate did yield several faint routine wear marks which indicated that the driver was a frequent, but not full-time belt user. As the driver slumped to her right following the impact sequence, a jewelry pin that was affixed to the left side of her dress snagged the shoulder belt webbing. The snags were located on the outside surface of the shoulder belt webbing and extended 22-26" and 30.25-36.75" vertically above the floor mounted anchor. Both snags were located .375" inboard of the belt edges. A third snag was located at both edges of the belt 36.75" above the floor anchor. The snag resembled superficial cuts at the edges and contained cloth fibers (probable dress fibers).

AIR BAG SYSTEM

The 1990 Dodge Shadow was equipped with a supplemental driver air bag system that deployed as the vehicle impacted the utility pole. The radiator support panel mounted crash sensors were not damaged; however, they were canted inboard slightly due to the deformation of the panel. All associated wiring appeared to be intact.

The air bag module was mounted to a two spoke steering wheel with the spokes located at the 4 and 8 o'clock positions. The module flaps opened in an H-configuration at the designated tear points with the upper flap measuring 6 11/16" horizontally and 2 3/8" vertically. The lower flap measured 6 3/4" horizontally and 2 9/16" vertically. There was no damage or evidence of occupant contact to the flaps.

The air bag measured approximately 23" in diameter in its deflated state. There were no internal tether straps for the air bag. The center area of the bag, however, was reinforced with a round 5 1/2" diameter reinforcement affixed to the inside surface of the bag. There was no damage or evidence of occupant contact (i.e., makeup transfers, etc.) to the bag. The air bag was vented by two 1 1/8" diameter ports located at the 12 o'clock position of the bag on the back side 3 1/4" beyond the peripheral seam. The following numbers were stamped on the bag adjacent to the inflator module:

(S)

(P)

There was no gas generant residue on or around the air bag. The inner surface of the air bag was examined using a small diameter flashlight inserted into a vent port. Again there was no evidence of gas generant residue on the bag or around the radial ports of the aluminum inflator module.

VEHICLE VELOCITY ESTIMATES

Travel Speed: 25-30 mph (estimated)

Impact Speed: *16.0 mph

Total ΔV : 14.4 mph

Longitudinal ΔV : -14.4 mph

Lateral ΔV : 0.0 mph

Energy Absorption: 19655.9 ft.-lbs.

*The impact speed and velocity changes were computed by the damage and trajectory algorithm of the CRASHPC program for the utility pole impact (impact #3).

COLLISION SEQUENCE

Pre-Crash:

The Dodge Shadow was traveling in a westerly direction on the two lane state route at an unknown, but reasonable rate of speed in a 35 mph speed zone. The driver of the vehicle either suffered an illness (history of epilepsy), or had fallen asleep as the vehicle descended a hill. The Dodge Shadow drifted to the left and gradually departed the left (south) road edge in a tracking orientation. The vehicle continued forward on the grassy area that bordered the south road edge for a police reported distance of 56 ft. on a travel path that nearly paralleled the road edge.

Crash:

The left front corner area of the vehicle sideswiped a 4x6" concrete fence post that was located 8'2" outboard of the road edge. The 12 o'clock direction of force impact fractured the post and produced sideswipe type damage to the vehicle that extended 23.75" rearward on the left front fender. The vehicle continued forward and impacted a second concrete fence post that was located 10' west of the first struck post. Direct contact damage on the vehicle began at the left bumper corner and extended 5" inboard onto the bumper facia. The 12 o'clock direction of force corner impact fractured the concrete post and separated the corner of the bumper facia from the vehicle. The fence post impacts did not alter the trajectory of the vehicle or result in a sufficient longitudinal deceleration required to deploy the vehicle's driver air bag system.

The Dodge Shadow continued forward and impacted a 10" diameter wooden utility pole with its center frontal area. The pole was located 5'9" west of the second struck fence post and 6'4" south of the road edge. Impact speed was computed at 16.0 mph by the damage and trajectory mode of the CRASHPC program. The 12 o'clock direction of force impact crushed the front bumper to a depth of 14.5" and also crushed the radiator support panel and hood face. As a result of the pole impact, the vehicle underwent a velocity change of 14.4 mph. The impact induced deceleration was of sufficient magnitude to deploy the vehicle's driver air bag system.

Post-Crash:

Final Rest -

The Dodge Shadow came to rest against the struck utility pole facing in its original westerly direction.

Driver Activities -

The driver slumped to her right and snagged the shoulder belt webbing with a jewelry pin that was fastened to the left side of her dress over her chest. The pin subsequently ripped the front of her dress vertically as she slid out of the shoulder belt and came to rest with her head and torso resting on the front seat cushion. At rest, she was lying on her right side facing the front of the vehicle with her buttocks on the left front seat cushion.

COLLISION SEQUENCE (CONT'D.)

Post-Crash (Cont'd.):

Police Activities -

The investigating officer and his partner were involved in a criminal investigation several hundred feet east of the crash scene. The officers stated that they heard a loud impact noise and focused their attention toward the crash scene. They observed the taillights of the vehicle off-road and immediately proceeded to the scene. As they approached the vehicle, the officers noted the interior of the vehicle was filled with smoke and all windows and doors were fully closed and locked. The investigating officer's partner used his flashlight to shatter the left rear door glass to gain access to the vehicle and driver. They subsequently found the driver slumped across the vehicle in an unconscious state. The officer called for fire and rescue assistance.

Rescue Activities -

The driver's brother, who was the local fire chief, lived nearby the crash scene and was the first emergency medical technician to arrive on-scene. As the rescue squad arrived, they placed a cervical collar on the driver and carefully placed her on a backboard and removed her from the vehicle through the right front door opening. The driver was subsequently transported to a local hospital where she was evaluated and taken into surgery. The driver expired at 0323 hours, 4 hours and 5 minutes following the crash.

Scene Clearance -

A local towing service was called to the scene to remove the vehicle. The officers did not expect the driver's injuries to be severe and therefore did not call for the accident investigation personnel.

HUMAN FACTORS/OCCUPANT DATA

Driver:	36 year old female
Height:	63.8"
Weight:	104-120 lbs. (estimated by family and medical examiner respectively)
Active Restraint System Usage:	3-point lap and shoulder belt
Usage Source:	Investigating police officer, driver injuries, snagged belt webbing from driver's jewelry
Eyeglasses:	Unknown, broken sunglasses reportedly found in vehicle
Vehicle Familiarity:	2 years

HUMAN FACTORS/OCCUPANT DATA (CONT'D.)

Route Familiarity:	Frequently traveled on road per family
Trip Plan:	En route to residence
Manner of Leaving Scene:	Ambulance
Type of Medical Treatment:	Transported to a local hospital where she expired following abdominal surgery at 0323 hours (4 hours, 5 minutes following the crash)

DRIVER INJURIES

<u>Injury</u>	<u>Severity (OIC/AIS)</u>	<u>Source</u>
Rupture of the abdominal aorta	Critical (MCRA-5)	Air bag/steering wheel loading
Multiple bilateral rib fractures (rib numbers not specified) with pulmonary edema	Severe (CBFS-4)	Air bag/steering wheel loading
Ruptured spleen with extensive retroperitoneal hemorrhage	Serious (MLRQ-3)	Air bag/steering wheel loading
Ecchymosis of the posterior aspect of the heart	Serious (CCCH-3)	Seat back
Extensive subarachnoid hemorrhage	Serious (HUUB-3)	Seat back, hyperextension of head
Contusions over both eyelids	Minor (FLCO-1, FRCO-1)	Air bag
Contusion over the left anterior shoulder	Minor (SLCI-1)	Shoulder belt webbing
Abrasions with contusions to the underside area of the chin	Minor (FIAI-1, FICI-1)	Air bag
Abrasions of the anterior neck	Minor (NAAI-1)	Air bag
Abrasions with contusion of the left side of the neck	Minor (NLAI-1, NLCI-1)	Shoulder belt webbing
Contusion of the right anterior neck	Minor (NACI-1)	Air bag

DRIVER INJURIES (CONT'D.)

<u>Injury</u>	<u>Severity (OIC/AIS)</u>	<u>Source</u>
Contusions over the outer area of both breasts	Minor (CLCI-1, CRCI-1)	Air bag
4cm and 2cm lacerations of the right knee	Minor (KRLI-1, KRLI-1)	Knee bolster
Contusion over the left knee	Minor (KLCI-1)	Knee bolster

DRIVER KINEMATICS

The driver of the Dodge Shadow had her seat adjusted to a forward position and the tilt steering column set to the center adjustment point. She was wearing the active 3-point lap and shoulder belt system. Belt usage was determined from snag marks found on the belt webbing that were probably produced by a stick pin jewelry item that was fastened to the left side of her dress. The investigating police officer noted the belt fastened around the driver as he arrived on-scene within seconds of the crash. At impact with the utility pole, the driver was presumably slumped forward against, or within a close proximity of the steering wheel. She initiated a forward trajectory in response to the center frontal impact and engaged the deploying air bag, which resulted in contusions over both eyelids (AIS-1), abrasions with contusions to the underside area of the chin (AIS-1), abrasions of the anterior neck (AIS-1), contusions of the right anterior neck (AIS-1), and contusions over the outer area of both breasts (AIS-1). Her loading force was transmitted through the air bag and into the steering assembly which deformed the upper rim 0.25" forward and compressed the energy absorbing steering column 1.6" (shear capsule separation). As a result of her involvement with the deploying air bag and loading of the steering assembly, the driver sustained multiple bilateral rib fractures (AIS-4), a rupture of the abdominal aorta (AIS-5), and a ruptured spleen with extensive retroperitoneal hemorrhage (AIS-3). The driver loaded the shoulder belt webbing during her forward trajectory which contused the left anterior shoulder (AIS-1) and produced abrasions with contusions to the left side of her neck (AIS-1). The driver's knees loaded the knee bolster which produced a nylon stocking transfer to the left side of the bolster. She sustained two lacerations of the right knee (AIS-1) and a contusion over the left knee (AIS-1) from bolster contact.

The driver was subsequently thrust rearward into the seatback by the deploying air bag. As a result, the posterior aspect of her heart impacted the back of the chest, which resulted in ecchymosis of the posterior aspect of the heart (AIS-3). Her head probably rotated over the seatback which resulted in an extensive subarachnoid hemorrhage (AIS-3) from hyperextension of the head.

As the vehicle came to rest, the driver slumped to her right and probably snagged the belt webbing with the jewelry pin which ripped the front of her dress. She slid out of the shoulder belt webbing and came to rest with her head and torso resting on the right front seat cushion.

SELECTED PRINTS



Pre-Crash Trajectory Of The Dodge Shadow.

3



Vehicle Crosses Center Line And Departs The Left Road Edge.

4



Initial Impacts With The Concrete Fence Posts.

5



Struck Utility Pole.

6



Lookback View Of The Vehicle's Trajectory.

7



Frontal Damage To The Dodge Shadow.

8



Closeup View Of The Center Frontal Utility Pole Impact Damage.

9



Left Front Three-Quarter View.

10



Closeup View Of The Second Fence Post Impact Damage To The
Left Bumper Corner Area.

11



Fence Post Sideswipe Damage To The Left Front Fender Area.

12



Left Perpendicular View Of The Frontal Area Showing
The Extent Of Bumper Crush.

13



Right Rear Three-Quarter View.

14



Right Side View Of The Dodge Shadow.

15



Right Front Three-Quarter View.

16



Angular View Of The Utility Pole Impact Damage.

17



Perpendicular View From The Right Corner Showing The Extent of Frontal Crush.

18



Overall Interior View Of The Driver's Contact Point And Deployed Air Bag.

19



20



Left Knee Nylon Stocking Transfer To The Fuse Box Cover In The Knee Bolster.

21



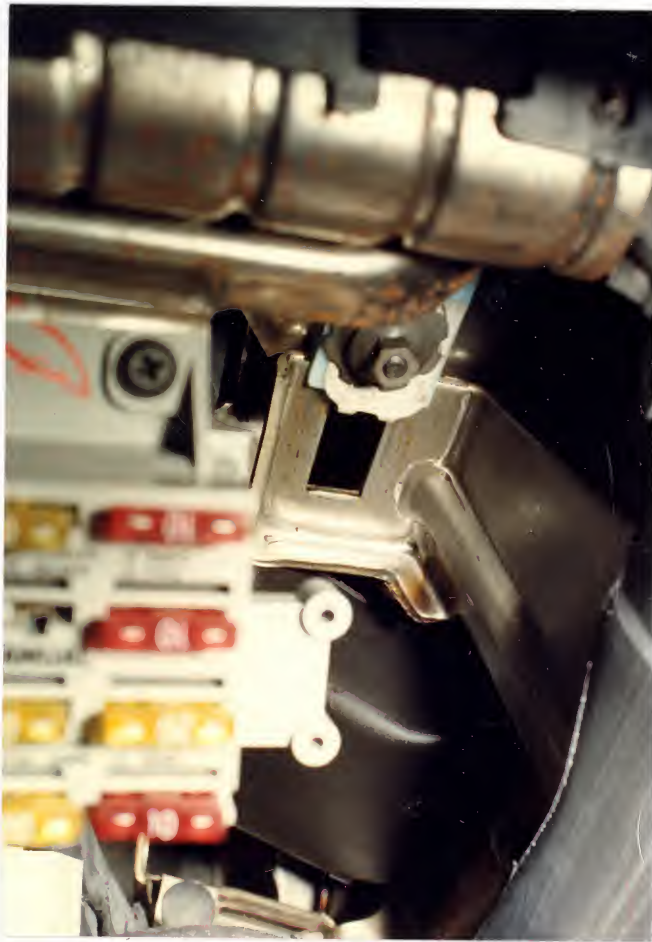
Steel Reinforcement To The Knee Bolster.

22



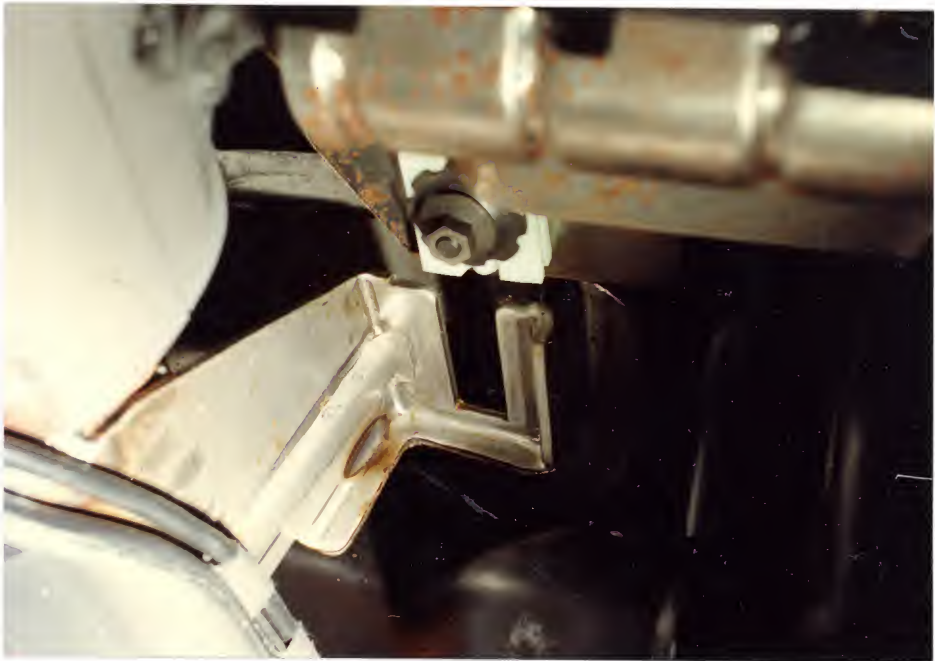
Perpendicular View Of The Steering Assembly And Deployed Air Bag.

23



Left Steering Column Shear Capsule, 1.375" of Compression.

24



Right Steering Column Shear Capsule, 1.625" of Compression.

25



Driver's Seat And Active 3-point Belt System.

26



Snags On Outside Surface Of Belt Webbing.

27



Driver Came To Rest Slumped Across Right Front Seat Cushion.

28



Dress Worn By The Driver At The Time Of The Crash.

29



Vertical Tear To The Top Of The Dress.

30



Torn Right Side Of Dress.

31



Torn Left Side Of Dress.

SLIDE INDEX

<u>Slide No(s).</u>	<u>Description</u>
1	Accident schematic
2	Driver injury mannequin
3-8	Pre-crash trajectory of the Dodge Shadow
9	Struck fence posts
10,11	Perpendicular views of the struck posts
12	Struck utility pole
13	Lookback view of vehicle's trajectory
14	Frontal view of the Dodge Shadow
15	Closeup view of the utility pole damage
16	Left front three-quarter view
17	Angular view showing the extent of crush from the pole impact
18	Second fence post contact damage to bumper facia
19,20	Initial fence post sideswipe damage on left front fender
21,22	Rear three-quarter views
23	Right side view
24	Perpendicular view showing the extent of frontal crush
25	Right front three-quarter view
26	Vehicle's identification label affixed to left door
27	Vehicle's odometer reading
28	Overall interior view from the left door area
29	Deployed driver's air bag
30	Air bag venting ports and identification numbers

SLIDE INDEX (CONT'D.)

<u>Slide No(s).</u>	<u>Description</u>
31	Upper air bag module flap
32	Lower air bag module flap
33	Left steering column shear capsule
34	Right steering column shear capsule
35,36	Driver's left knee contact (nylon stocking transfer) to the fuse box cover of the knee bolster
37	Driver's seat and active 3-point restraint system
38,39	Snags on outer aspect of shoulder belt webbing
40	Driver's final rest position lying across interior onto right front seat cushion

AGE	18
SEX	Female
WT	100 (120-130)
HGT	1.60

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Students with disabilities are also underrepresented in the field of health care.

Abstracts of the author's work
 1960-1969

Democrat on the left:
"warrior" identifier (200-0),
identifier link nothing

Samples collected, all
 specimens with primary colors
 1940-45, all handwriting
 & photo location

- Improved options with automatic re-perfused.

Reprints of the abstracts
series EM-10, plus new
abstracts about

Handwritten note: The left hand is...
The right hand is...



CA9112 #3



CA9112 #4



CA 9112 #5



CA9112 #6



CA9112 #7



CA9112 #8



CA9112 #9



CA9112 #10



CA9112 #11



CA9112 #12



CA9112 #13



CA9112 #14



CA9112 #15



CA9112 #16



CA9112 #17



CA9112 #18



CA9112 #19



CA9112 #20



CA9112 #21



CA9112 #22



CA9112 #23



CA9112 #24



CA9112 #25



CA9112 #26



CA9112 #27



CA9112 #28
Best Available



CA 9112 #29



CA9112 #30



CA9112 #31



CA 9112 #32
Best Available





CA9112 #34



CA9112 #35
Best Available



CA9112 #36
Best Available



CA 9112 #37



CA9112 #38



CA9112 #39



CA9112 #40

APPENDIX A

Police Accident Report

COMMONWEALTH OF [REDACTED]
POLICE ACCIDENT REPORT

BEST AVAILABLE COPY

1. INCIDENT NUMBER		2. AGENCY NAME		3. STATION/PRECINCT	
4. INVESTIGATOR NAME		5. PATROL ZONE		6. DATE REPORTED	
7. REPORT DATE		8. BADGE NO.		9. DATE APPROVED	
10. TOTAL UNITS		11. NUMBER KILLED		12. NUMBER INJURED	
13. WAS TOWING REQUIRED BECAUSE OF VEHICULAR DAMAGE		14. UNIT 1		15. UNIT 2	
16. VEHICLE DAMAGE		17. NONE		18. LIGHT	
19. MODERATE		20. SEVERE		21. UNIT 1	
22. UNIT 2		23. PENNDOT PROPERTY		24. HAZARDOUS MATERIALS	
25. PRIVATE PROPERTY CLOSED TO PUBLIC		26. Y/N		27. Y/N	
28. DESCRIPTION OF DAMAGED PROPERTY		29. OWNER		30. PHONE	
31. ACCIDENT TIME AND LOCATION		32. ACCIDENT DATE		33. DAY OF WEEK	
34. COUNTY		35. CODE		36. MUNICIPALITY	
37. PRINCIPAL ROAD		38. ROUTE NO / STREET NAME		39. SPEED LIMIT	
40. INTERSECTING RD.		41. ROUTE NO / STREET NAME		42. SPEED LIMIT	
43. NOT AT INTERSECTION		44. NEAREST REFERENCE POINT		45. DIRECTION FROM ACCIDENT SITE	
46. DISTANCE FROM SITE		47. DISTANCE WAS		48. MEASURED	
49. ESTIMATED		50. CONSTRUCTION ZONE		51. TRAFFIC CONTROL DEVICE	
52. NOT APPLICABLE		53. MAINT - SHORT TERM		54. MAINT - LONG TERM	
55. CONST - LONG TERM		56. UTILITY MAINTENANCE		57. NO CONTROLS	
58. FLASHING SIGNALS		59. TRAFFIC SIGNAL		60. STOP SIGN	
61. YIELD SIGN		62. RR CROSSING		63. POLICE OFFICER	
64. OR FLAGMAN		65. FLASHING SCHOOL ZONE		66. OTHER	
67. UNKNOWN		68. DRIVER NUMBER		69. STATE	
70. CLASS		71. RESTRICTIONS		72. EXPIRED	
73. SEX		74. DOB		75. DRIVER	
76. ADDRESS		77. ZIP CODE		78. PHONE NUMBER	
79. OWNER		80. ADDRESS		81. ZIP CODE	
82. PHONE NUMBER		83. LEGALLY PARKED		84. VIN	
85. TITLE NO.		86. STATE		87. REG PLATE	
88. YEAR		89. MAKE		90. MODEL (NOT BODY TYPE)	
91. TOWED TO		92. TOWED BY		93. TRAILER MAKE, MODEL, TYPE	
94. TRAILER PLATE NO.		95. STATE		96. OWNER OF TRAILER	
97. ADDRESS		98. ZIP CODE		99. DRIVER	
100. ADDRESS		101. ZIP CODE		102. PHONE NUMBER	
103. OWNER		104. ADDRESS		105. ZIP CODE	
106. PHONE NUMBER		107. LEGALLY PARKED		108. VIN	
109. TITLE NO.		110. STATE		111. REG PLATE	
112. YEAR		113. MAKE		114. MODEL (NOT BODY TYPE)	
115. TOWED TO		116. TOWED BY		117. TRAILER MAKE, MODEL, TYPE	
118. TRAILER PLATE NO.		119. STATE		120. OWNER OF TRAILER	
121. ADDRESS		122. ZIP CODE		123. DRIVER	
124. ADDRESS		125. ZIP CODE		126. PHONE NUMBER	
127. OWNER		128. ADDRESS		129. ZIP CODE	
130. PHONE NUMBER		131. LEGALLY PARKED		132. VIN	
133. TITLE NO.		134. STATE		135. REG PLATE	
136. YEAR		137. MAKE		138. MODEL (NOT BODY TYPE)	
139. TOWED TO		140. TOWED BY		141. TRAILER MAKE, MODEL, TYPE	
142. TRAILER PLATE NO.		143. STATE		144. OWNER OF TRAILER	
145. ADDRESS		146. ZIP CODE		147. DRIVER	
148. ADDRESS		149. ZIP CODE		150. PHONE NUMBER	
151. OWNER		152. ADDRESS		153. ZIP CODE	
154. PHONE NUMBER		155. LEGALLY PARKED		156. VIN	
157. TITLE NO.		158. STATE		159. REG PLATE	
160. YEAR		161. MAKE		162. MODEL (NOT BODY TYPE)	
163. TOWED TO		164. TOWED BY		165. TRAILER MAKE, MODEL, TYPE	
166. TRAILER PLATE NO.		167. STATE		168. OWNER OF TRAILER	
169. ADDRESS		170. ZIP CODE		171. DRIVER	
172. ADDRESS		173. ZIP CODE		174. PHONE NUMBER	
175. OWNER		176. ADDRESS		177. ZIP CODE	
178. PHONE NUMBER		179. LEGALLY PARKED		180. VIN	
181. TITLE NO.		182. STATE		183. REG PLATE	
184. YEAR		185. MAKE		186. MODEL (NOT BODY TYPE)	
187. TOWED TO		188. TOWED BY		189. TRAILER MAKE, MODEL, TYPE	
190. TRAILER PLATE NO.		191. STATE		192. OWNER OF TRAILER	
193. ADDRESS		194. ZIP CODE		195. DRIVER	
196. ADDRESS		197. ZIP CODE		198. PHONE NUMBER	
199. OWNER		200. ADDRESS		201. ZIP CODE	
202. PHONE NUMBER		203. LEGALLY PARKED		204. VIN	
205. TITLE NO.		206. STATE		207. REG PLATE	
208. YEAR		209. MAKE		210. MODEL (NOT BODY TYPE)	
211. TOWED TO		212. TOWED BY		213. TRAILER MAKE, MODEL, TYPE	
214. TRAILER PLATE NO.		215. STATE		216. OWNER OF TRAILER	
217. ADDRESS		218. ZIP CODE		219. DRIVER	
220. ADDRESS		221. ZIP CODE		222. PHONE NUMBER	
223. OWNER		224. ADDRESS		225. ZIP CODE	
226. PHONE NUMBER		227. LEGALLY PARKED		228. VIN	
229. TITLE NO.		230. STATE		231. REG PLATE	
232. YEAR		233. MAKE		234. MODEL (NOT BODY TYPE)	
235. TOWED TO		236. TOWED BY		237. TRAILER MAKE, MODEL, TYPE	
238. TRAILER PLATE NO.		239. STATE		240. OWNER OF TRAILER	
241. ADDRESS		242. ZIP CODE		243. DRIVER	
244. ADDRESS		245. ZIP CODE		246. PHONE NUMBER	
247. OWNER		248. ADDRESS		249. ZIP CODE	
250. PHONE NUMBER		251. LEGALLY PARKED		252. VIN	
253. TITLE NO.		254. STATE		255. REG PLATE	
256. YEAR		257. MAKE		258. MODEL (NOT BODY TYPE)	
259. TOWED TO		260. TOWED BY		261. TRAILER MAKE, MODEL,	

62. RESPONDING EMS AGENCY [REDACTED], Fire Co. (Ambulance) MEDICAL FACILITY [REDACTED] Hospital

63. USE CODES FROM OVERLAY SHEET 1 TO RESPOND TO BLOCKS A THROUGH M OF THIS SECTION.

[illegible]

INVESTIGATING AGENCY USE

INCIDENT NO:		BEST AVAILABLE COPY		POLICE ACCIDENT REPORT												ACCIDENT DATE:											
64. USE OVERLAY SHEET 2 TO COMPLETE BLOCKS 0 THROUGH X		UNIT 1		1	4	0	-	1	12	0	9	9	3	0	0	65. HAZARDOUS MATERIALS		UNIT 1									
		UNIT 2													PLACARD		UNIT 2										
				O	P	Q	R	S	T	U	V	W	X		NUMBERS												
66. DIAGRAM														68. ILLUMINATION													
														1 - DAWN		4											
														2 - DAYLIGHT													
														3 - DARK (STREET LIGHTS)													
														4 - DARK (NO LIGHTS)													
														5 - DUSK													
														67. WEATHER		0											
														0 - NO ADVERSE COND													
														1 - RAINING													
														2 - SLEET, HAIL													
														FREEZING RAIN													
														3 - SNOWING													
														4 - FOG, SMOKE, ETC													
														5 - RAINING AND FOGGY													
														6 - OTHER - DESCRIBE IN NARRATIVE													
														68. ROAD SURFACE		1											
														1 - DRY													
														2 - WET													
														3 - MUDDY													
														4 - SNOW COVERED													
														5 - ICE COVERED													
														6 - PLOWED													
														7 - SALTED/CINDERED													
														8 - ICE PATCHES													
70. PENNSYLVANIA SCHOOL DISTRICT (IF INVOLVED)																		N/A									
71. NARRATIVE																											
<p>This officer arrived on 9/1 at approx., 2317 hrs., to this accident scene, a two lane, marked, asphalt, east-west highway.</p> <p>Unit #1 was traveling west on .</p> <p>While traveling on this roadway, opr. #1 lost control of unit #1 for unknown reasons. After losing control, unit #1 struck a wooden fence on the east-bound side of the roadway. The front section of unit #1 then struck a utility pole,</p> <p>After impact, unit #1 remained facing west on on the east-bound side, on the grass berm.</p> <p>This officer observed approx., 56ft., of tire imprint marks on the grass of the east-bound lane. A damaged wooden fence was also observed on the grass of the east-bound lane. A utility pole received no damage, just a small nick where impact was made.</p> <p>This accident occurred while this officer was assisting Tpr. of on a criminal investigation, ref: at the Apartments. This officer and Tpr. of heard a loud impact noise. After looking down the road, we discovered that a vehicle had struck a pole. We immediately proceeded to the accident scene to render assistance. Upon our arrival, the interior of the car was more</p>																											
72. WITNESS NAME																		ADDRESS		PHONE							
None known																											
72. WITNESS NAME																		ADDRESS		PHONE							
73. DESCRIBE VIOLATIONS																		74. SECTION NUMBERS (ONLY IF CHARGED)		75. CITATION REPORT NO.(S)							
UNIT 1 Driving on roadways laned for traffic																											
UNIT 2																											
USE CODES ON OVERLAY SHEETS FOR BLOCKS 77-78																		76. NAME		77. PROBABLE USE		78. TYPE TEST		79. RESULTS		80. INVESTIGATION COMPLETE?	
																		UNIT 1		9		0		0 9 7		NO	
																		UNIT 2		34				0			

1. INCIDENT NUMBER		2. AGENCY NAME		3. STATION/PRECINCT	
4. INVESTIGATOR NAME		5. BADGE NO.		6. PATROL ZONE	
8. REPORT DATE		7. APPROVED BY		9. DATE APPROVED	
10. ACCIDENT TIME AND LOCATION		11. ACCIDENT DATE		12. TIME OF DAY	
13. COUNTY		14. CODE		15. MUNICIPALITY	
16. NAMES OF ALL OPERATORS		(1)		(2)	
16. NAMES OF ALL OPERATORS		(3)		(4)	
COMPLETE ONLY THE INFORMATION THAT HAS CHANGED SINCE ORIGINAL REPORT					
17. DRIVER NUMBER		18. STATE		19. CLASS	
20. DRIVER		21. ADDRESS		22. PHONE NUMBER	
23. OWNER		24. ADDRESS		25. PHONE NUMBER	
26. LEGALLY PARKED <input type="checkbox"/>		27. VIN		28. TITLE NO.	
29. YEAR		30. MAKE		31. MODEL (NOT BODY TYPE)	
32. INSURANCE CO.		33. INS. CO CODE		34. POLICY NO.	
35. TRAILER (MAKE, MODEL, TYPE)		36. TRAILER PLATE NO.		37. STATE	
38. OWNER OF TRAILER		39. ADDRESS		40. PHONE	

40. NARRATIVE (cont'd.)

completely smoke filled and all the doors were locked. Tpr. [REDACTED] smashed out the rear drivers' side window with his flashlight to gain access into the car. After opening the drivers' side door, we observed a female operator slumped over on the passenger seat, who was breathing, but not moving. I immediately contacted and informed [REDACTED] desk personnel, who was Tpr. [REDACTED] at the time, that there was a car accident and to send an ambulance and also fire units because the car was smoking. Within ten minutes, the ambulance and fire personnel arrived at the scene.

No advance accident personnel were called to the scene to take measurements at the time of the accident, due the fact that the condition of opr. #1 did not appear to be fatal.

This officer arrived at [REDACTED] Hospital at approx., 0110 hrs., to check on the condition of opr #1. I was informed by the hospital personnel that [REDACTED] was under-going surgery at the time and was unable to be interviewed. (more)

NARRATIVE CONTINUED ON BACK IN BLOCK 44

41. USE CODES FROM OVERLAY SHEET 1 TO RESPOND TO BLOCKS A THROUGH M OF THIS SECTION.

[illegible]

INCIDENT NO.:

POLICE ACCIDENT REPORT SUPPLEMENTAL

BEST AVAILABLE COPY

ACCIDENT DATE:

91

42. USE OVERLAY SHEET 2 TO
COMPLETE BLOCKS
O THROUGH X

UNIT 1

UNIT 2

O

P

Q

R

S

T

U

V

W

X

HARDPOUS

MATERIALS

PLACARD

NUMBERS

UNIT 1

UNIT 2

44. NARRATIVE (CONT.)

JUL

This officer called the hospital at approx., 0625 hrs., prior to getting off-duty, at which time I was informed that Dr. [REDACTED] of [REDACTED] Hospital had pronounced [REDACTED] dead at 0323 hrs.

[REDACTED] was issued to opr. #1 brother: [REDACTED] at the hospital. [REDACTED] was also at the accident scene, at time he took his sisters' pocketbook and other personal items. The drivers' license of the deceased has not yet been obtained. The owner of the wooden fence will receive an accident notice in the mail.

Assisted by: T [REDACTED] or [REDACTED] Vol. Fire Co. (Ambulance) and [REDACTED] Fire Co.

This investigation will continue until the cause of death can be determined.

Unit scope message [REDACTED] was sent by this station as required, to the [REDACTED] Patrol.

The National Safety Transportation Board will be notified of the airbag deployment, as directed by [REDACTED]

45. DESCRIBE VIOLATIONS

46. SECTION NUMBERS (ONLY IF CHARGED)

47. CITATION REPORT NO.(S)

UNIT 1

UNIT 2

USE CODES ON
OVERLAY SHEET
FOR BLOCKS
49 - 51

48. NAME

49. PROBABLE USE

50. TYPE TEST

51. RESULTS

52. INVESTIGATION
COMPLETE?

UNIT 1

UNIT 2

0. ____ %

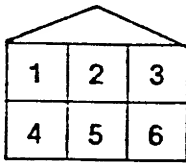
0. ____ %

NO

AA 45 (1-88)

DEPARTMENT OF TRANSPORTATION

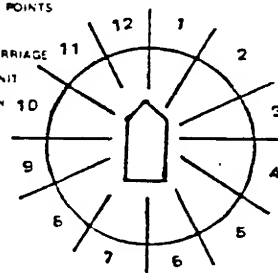
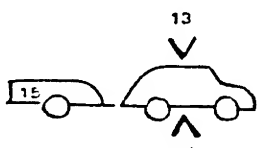
**Police Accident Report
Overlay Sheet 1**

62. UNIT NUMBER — BLOCK A 1 — UNIT 1 2 — UNIT 2	62. TYPE OF INJURY — BLOCK I 0 — NO INJURY 1 — AMPUTATION 2 — BLEEDING WOUND 3 — BROKEN BONES 4 — DISTORTED MEMBER 5 — BRUISES/ABRASIONS 6 — BURNS 7 — SWELLING 8 — LIMPING 9 — COMPLAINT OF PAIN 97 — OTHER INCAPACITATING 98 — OTHER NON INCAPACITATING 99 — UNKNOWN
63. SEAT POSITION — BLOCK B 1 — DRIVER 2 — MIDDLE FRONT 3 — RIGHT FRONT 4 — LEFT REAR 5 — MIDDLE REAR 6 — RIGHT REAR 7 — PEDESTRIAN 8 — OTHER SEAT POSITION 9 — UNKNOWN SEAT POSITION	<div style="text-align: center;">  </div>
63. SEX — BLOCK C M — MALE F — FEMALE U — UNKNOWN	63. AREA OF APPARENT INJURY — BLOCK J 0 — NO INJURY 1 — FACE 2 — HEAD 3 — NECK 4 — BACK 5 — ARM(S) 6 — LEG(S) 7 — CHEST/STOMACH 8 — INTERNAL 9 — ENTIRE BODY 97 — OTHER AREAS 99 — UNKNOWN
63. AGE — BLOCK D CODE ACTUAL AGE EXCEPT FOR 1 — FOR INFANTS UP TO THE AGE OF 2 2 — AGE 25 OR GREATER 9 — UNKNOWN	63. INJURY INFORMATION SOURCE — BLOCK K N — NOT APPLICABLE A — OBSERVATION OF OFFICER B — STATEMENT FROM INDIVIDUAL C — MEDICAL/PARAMEDICAL PERSONNEL
63. ACTIVE RESTRAINT TYPE — BLOCK E 0 — NONE OR NOT APPLICABLE 1 — SHOULDER HARNESS ONLY 2 — SEAT BELT ONLY 3 — COMBINATION (HARNESS & BELT) 4 — CHILD RESTRAINT DEVICE 7 — HELMET 8 — OTHER 9 — UNKNOWN	63. EJECTION/EXTRICATION — BLOCK L 0 — NOT APPLICABLE 1 — TOTALLY EJECTED 2 — PARTIALLY EJECTED 3 — PARTIAL EJECTION REQUIRING EXTRICATION 4 — EXTRICATION BY UNKNOWN PERSONS 5 — EXTRICATION — TWO OR MORE TYPES 6 — EXTRICATION BY AMBULANCE/RESCUE PERSONNEL 7 — EXTRICATION BY POLICE 8 — EXTRICATION BY SELF 9 — UNKNOWN EJECTION/EXTRICATION
63. ACTIVE RESTRAINT USAGE — BLOCK F 0 — NOT APPLICABLE 1 — IN USE 2 — NOT IN USE 9 — UNKNOWN IF USED	63. INJURY TRANSPORTATION — BLOCK M 0 — NOT APPLICABLE 1 — AMBULANCE 2 — HELICOPTER 3 — FIRE RESCUE VEHICLE 4 — PRIVATE VEHICLE 5 — POLICE VEHICLE 8 — OTHER 9 — UNKNOWN
63. PASSIVE RESTRAINT TYPE — BLOCK G 0 — NONE OR NOT APPLICABLE 1 — AIRBAG DEPLOYED 2 — AIRBAG NOT DEPLOYED 3 — AUTOMATIC SEAT BELT 8 — OTHER 9 — UNKNOWN	
63. INJURY SEVERITY — BLOCK H 0 — NO INJURY 1 — DEATH 2 — MAJOR INJURY 3 — MODERATE INJURY 4 — MINOR INJURY 9 — UNKNOWN SEVERITY	

streets, mileposts, or SR/Segment Markers. Do not use Utility Poles, House Numbers, or old Station Markers.

Accident Diagram — The diagram is a visual representation of the accident location and the events that occurred. Show the movements of the vehicle(s) involved during the accident with arrows.

POLICE ACCIDENT REPORT — OVERLAY SHEET 2

64. DRIVER PRESENCE — BLOCK O 1 — DRIVER OPERATED VEHICLE 2 — DRIVER LESS VEHICLE 3 — DRIVER LEFT SCENE (AFTER ACCIDENT)		BUSES 30 — SCHOOL BUS 31 — CROSS COUNTRY INTERCITY BUS 32 — TRANSIT BUS 33 — OTHER BUS 35 — UNKNOWN BUS TYPE VANS 40 — VAN 41 — VAN COMMERCIAL CUTAWAY 42 — VAN BASED MOTORHOME 43 — OTHER VAN TYPE 45 — UNKNOWN VAN TYPE LIGHT TRUCKS (GVWR '10,000) 50 — PICKUP 51 — PICKUP WITH SLIDE IN CAMPER 52 — PICKUP BASED MOTORHOME 53 — CAB CHASSIS BASED 54 — TRUCK BASED PANEL 55 — TRUCK BASED STATION WAGON 56 — TRUCK BASED UTILITY 57 — OTHER LIGHT TRUCK 58 — UNKNOWN LIGHT TRUCK TYPE 59 — STATION WAGON BASE BODY TYPE UNKNOWN 60 — UTILITY, BASE BODY TYPE UNKNOWN 65 — UNKNOWN LIGHT TRUCK		MEDIUM/HEAVY TRUCKS 70 — SINGLE UNIT STRAIGHT TRUCK (10,000 GVWR - 19,500) 71 — SINGLE UNIT STRAIGHT TRUCK (19,500 GVWR - 26,000) 72 — SINGLE UNIT STRAIGHT TRUCK (OVER 26,000) 73 — MEDIUM/HEAVY TRUCK BASED MOTORHOME 74 — TRUCK TRACTOR 75 — UNKNOWN IF SINGLE UNIT OR COMBINATION UNIT (GVWR - 26,000) 76 — UNKNOWN IF SINGLE UNIT OR COMBINATION UNIT (GVWR - 26,000) 77 — CAMPER OR MOTORHOME UNKNOWN TRUCK TYPE 78 — SINGLE UNIT STRAIGHT TRUCK (GVWR UNKNOWN) 79 — UNKNOWN TRUCK TYPE OTHER MOTORIZED VEHICLES 80 — SNOWMOBILES 81 — FARM EQUIPMENT 82 — ATV 83 — CONSTRUCTION EQUIPMENT 84 — OTHER UNSPECIFIED VEHICLE 85 — UNKNOWN OTHERS NON-MOTORIZED VEHICLES 90 — UNICYCLE, BICYCLE, TRI-CYCLE 91 — OTHER PEDALCYCLE (BIG WHEEL) 92 — UNKNOWN PEDALCYCLE 93 — HORSE AND BUGGY 94 — HORSE AND RIDER	
64. BODY TYPES — BLOCK P AUTOMOBILES 1 — CONVERTIBLE 2 — 2 DOOR SEDAN, HARDTOP, COUPE 3 — 3 DOOR 2 DOOR HATCHBACK 4 — 4 DOOR SEDAN, HARDTOP 5 — 5 DOOR 4 DOOR HATCHBACK 6 — STATION WAGON 7 — HATCHBACK, NO DOORS UNKNOWN 8 — OTHER AUTOMOBILE 9 — UNKNOWN AUTOMOBILE 10 — AUTOMOBILE BASED PICKUP 11 — AUTOMOBILE BASED PANEL 12 — SHORT UTILITY 13 — LARGE LIMOUSINE 14 — THREE WHEEL AUTO OR (DERIVATIVE)		64. VEHICLE OWNERSHIP — BLOCK S 1 — PRIVATE VEHICLE OWNED BY DRIVER 2 — PRIVATE VEHICLE OWNED BY ANOTHER 3 — RENTED VEHICLE 4 — STATE POLICE VEHICLE 5 — PENNDOT VEHICLE 6 — OTHER COMMONWEALTH VEHICLE 7 — MUNICIPAL POLICE VEHICLE 8 — OTHER MUNICIPAL GOVT VEHICLE 9 — FEDERAL GOVERNMENT VEHICLE 10 — COMMERCIAL VEHICLE 98 — OTHER 99 — UNKNOWN		64. VEHICLE STATUS — BLOCK U 0 — NOT APPLICABLE 1 — LEGALLY PARKED 2 — ILLEGALLY PARKED 3 — HIT AND RUN 4 — DISABLED FROM PREVIOUS ACCIDENT 64. TRAVEL SPEED — BLOCK V 0 — STOPPED OR PARKED 1 — 97 ACTUAL OR ESTIMATED SPEED 98 — 98 MPH OR GREATER 99 — UNKNOWN	
64. SPECIAL USAGE — BLOCK Q 0 — NOT APPLICABLE 1 — PUPIL TRANSPORT 2 — FIRE VEHICLE 3 — AMBULANCE 4 — OTHER EMERGENCY VEHICLE 5 — POLICE VEHICLE 6 — TRACTOR TRAILER 7 — TWIN TRAILER 8 — COMMERCIAL PASSENGER 12 — TOWING PASSENGER VEHICLE 13 — TOW TRUCK 14 — TOWING UTILITY TRAILER 15 — TOWING MOBILE OR MODULAR HOME 16 — TOWING CAMPER		64. INITIAL IMPACT POINT — BLOCK T 0 — NO IMPACT 1 — 12 CLOCK POINTS 13 — TOP 14 — UNDERCARRIAGE 15 — TOWED UNIT 99 — UNKNOWN		64. VEHICLE GRADIENT — BLOCK W 1 — LEVEL ROADWAY 2 — UP HILL 3 — DOWN HILL 4 — SAG 5 — CREST	
64. NO OF AXLES — BLOCK R CODE NUMBER OF AXLES ON TRUCKS, TRACTOR TRAILERS, AND TWIN TRAILERS					
77. PROBABLE USE (ALCOHOL OR DRUGS) 0 — NONE 1 — ALCOHOL 2 — CONTROLLED SUBSTANCES 3 — OTHER DRUGS 4 — BOTH ALCOHOL AND DRUGS 9 — UNKNOWN		78. TYPE TEST 0 — NOT APPLICABLE / NO TEST GIVEN 1 — BLOOD 2 — BREATH 3 — URINE 4 — TEST REFUSED 8 — OTHER 9 — UNKNOWN		79. RESULTS (ALCOHOL TEST) CODE ACTUAL TEST RESULT 97 — NO TEST GIVEN 98 — REFUSED 99 — RESULTS UNKNOWN	
64. HAZARDOUS MATERIALS — BLOCK X 00 — NOT APPLICABLE 01 — NON-FLAMMABLE GAS 02 — COMBUSTIBLE 03 — ORGANIC PEROXIDE 04 — CORROSIVE 05 — EXPLOSIVE "A" 06 — OXYGEN 07 — POISON 08 — EXPLOSIVE "B" 09 — CHLORINE 10 — OXIDIZER 11 — POISON GAS 12 — FUEL OIL 13 — DANGEROUS 14 — RADIOACTIVE 15 — FLAMMABLE SOLID W 16 — FLAMMABLE 17 — FLAMMABLE GAS 18 — FLAMMABLE SOLID 19 — GASOLINE 20 — BLASTING AGENTS 21 — RESIDUE 98 — OTHER 99 — UNKNOWN					

REMOVE THIS STUB (AND ATTACHED CARBON PAPERS) BEFORE COMPLETING REVERSE SIDE

APPENDIX B

CRASHPC Output

(Damage and Trajectory Algorithm)

SUMMARY OF CRASHPC RESULTS (USING SPINOUT)

91-12

IMPACT SPEED		TOTAL (MPH)	LONG. (MPH),	LAT. (MPH)	
(DAMAGE	VEH #1	16.0	16.0	.0	
AND SPINOUT)	VEH #2	.0	.0	.0	

SPEED CHANGE		TOTAL (MPH)	LONG. (MPH)	LAT. (MPH)	ANG. (DEG)
(DAMAGE)	VEH #1	14.4	-14.4	.0	.0
	VEH #2	.0	.0	.0	.0

ENERGY DISSIPATED BY DAMAGE VEH#1: 19655.9 FT-LB VEH#2: .0 FT-LB

SUMMARY OF DAMAGE DATA
VEHICLE # 1(* INDICATES DEFAULT VALUE)
VEHICLE # 2

TYPE-----CATEGORY 2
 STIFFNESS---CATEGORY 9
 WEIGHT-----2762.0 LBS.
 CDC-----12FYEW2
 L-----48.0 IN.
 C1-----.3 IN.
 C2-----5.8 IN.
 C3-----13.3 IN.
 C4-----7.4 IN.
 C5-----2.3 IN.
 C6-----.0 IN.
 D-----5.0
 RHO-----1.00 *
 ANG-----0.0 DEG.
 D'-----7.8 IN.

TYPE-----CATEGORY 11
 STIFFNESS---CATEGORY 0
 WEIGHT-----1000000.0 LBS. *
 CDC-----BARRIER
 L-----0.0 IN. *
 C1-----0.0 IN. *
 C2-----0.0 IN. *
 C3-----0.0 IN. *
 C4-----0.0 IN. *
 C5-----0.0 IN. *
 C6-----0.0 IN. *
 D-----0.0 *
 RHO-----1.00 *
 ANG-----0.0 DEG. *
 D'-----0.0 IN.

SCENE INFORMATION

	VEHICLE # 1	VEHICLE # 2
IMPACT X-POSITION	-6.30 FT.	4.20 FT.
IMPACT Y-POSITION	.30 FT.	.00 FT.
IMPACT HEADING ANGLE	.00 DEG.	180.00 DEG.
REST X-POSITION	-5.30 FT.	4.20 FT.
REST Y-POSITION	.30 FT.	.00 FT.
REST HEADING ANGLE	.00 DEG.	180.00 DEG.
END-OF-ROTATION X-POSITION	-6.30 FT.	
END-OF-ROTATION Y-POSITION	.30 FT.	
END-OF-ROTATION HEADING ANGLE	.00 DEG.	
DIRECTION OF ROTATION	NONE	NONE
AMOUNT OF ROTATION	<360	<360

COLLISION CONDITIONS

VEHICLE # 1		VEHICLE # 2	
XC10'	= -6.3 FT.	XC20'	= 4.2 FT.
YC10'	= .3 FT.	YC20'	= .0 FT.
PSI10	= .0 DEG.	PSI20	= 180.0 DEG.
PSI1D0	= .0 DEG/SEC	PSI2D0	= .0 DEG/SEC
BETA1	= .0 DEG.	BETA2	= .0 DEG.

SEPARATION CONDITIONS (USING SPINOUT)

VEHICLE # 1		VEHICLE #2	
US1	= 1.6 MPH	US2	= .0 MPH
VS1	= .0 MPH	VS2	= .0 MPH
PSISD1	= .0 DEG/SEC	PSISD2	= .0 DEG/SEC

DIMENSIONS AND INERTIAL PROPERTIES

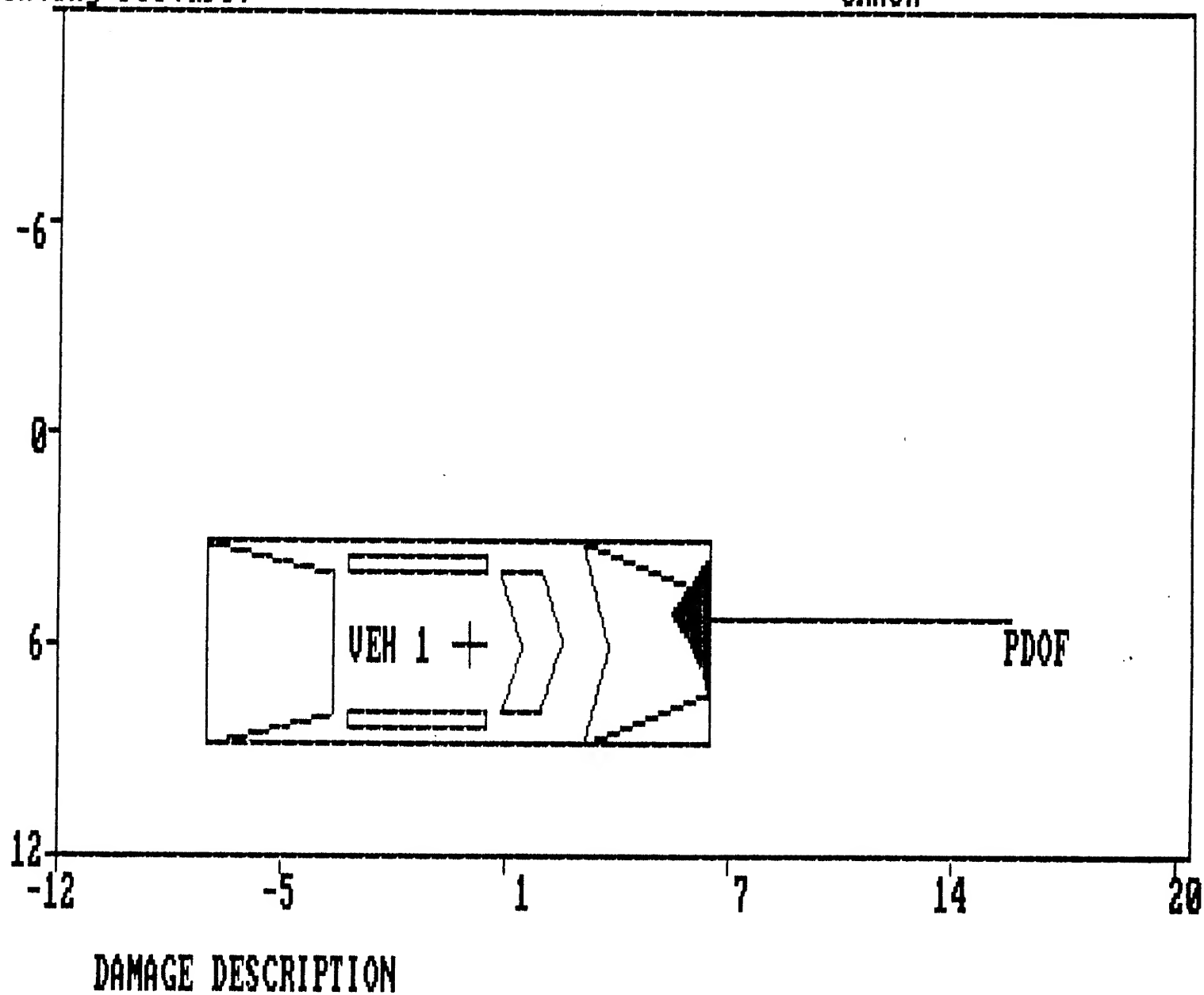
A1	= 46.3	IN.	A2	= 50.0	IN.
B1	= 50.1	IN.	B2	= 50.0	IN.
TR1	= 54.6	IN.	TR2	= 50.0	IN.
I1	= 21192.6	LB-SEC**2-IN	I2	= 2600104000.0	LB-SEC**2-IN
M1	= 7.181	LB-SEC**2/IN	M2	= 2600.104	LB-SEC**2/IN
XF1	= 83.3	IN.	XF2	= 50.0	IN.
XR1	= -91.6	IN.	XR2	= -50.0	IN.
YS1	= 33.6	IN.	YS2	= 50.0	IN.

ROLLING RESISTANCE

VEHICLE # 1		VEHICLE # 2	
LF-----	.30	LF-----	.00
RF-----	.30	RF-----	.00
LR-----	.02	LR-----	.00
RR-----	.02	RR-----	.00
MU-----	.55		

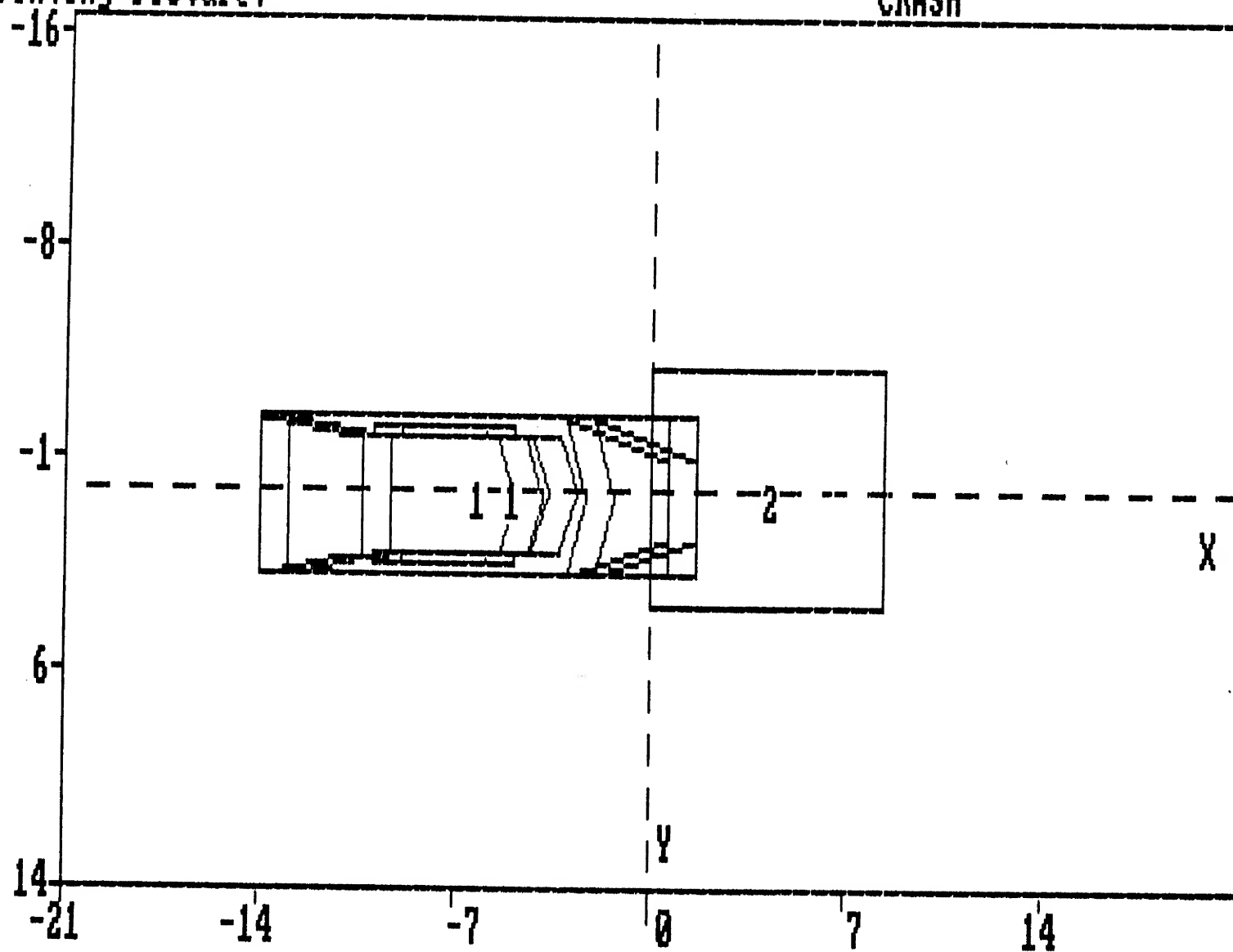
Printing Picture:

CRASH



Printing Picture:

CRASH



SCENE DESCRIPTION

APPENDIX C

Air Bag Supplement

ACCIDENT SUMMARY

ACCIDENT DATE / 91

POLICE INVESTIGATED (1,2,9)*

 STATE POLICE

City 6692 County 029

GENERAL LOCALITY

- (1) Freeway, Limited Access
- (2) Urban (City)
- (3) Urban-Rural (mixed)
- (4) Rural, Fields

CONFIGURATION (First Harm)

- (0) Struck Object or Pedestrian
- (1) Rear-End
- (2) Head-On
- (3) Rear-to-Rear
- (4) Angle
- (5) Sideswipe-Same Direction
- (6) Sideswipe-Opposite Direct.
- (7) NonCollision Fell from Veh
- (8) NonImpact Deployment
- (9) Unknown

FIRE INVOLVED (0) None

- (1) AirBag Vehicle
- (2) Other Vehicle
- (3) Both Vehicles
- (9) Unknown

NUMBER: VEHICLES INVOLVED

(8)=8 or more

PERSONS INVOLVED

INJURED PERSONS

MAXIMUM AIS IN ACCIDENT

OTHER VEHICLE: MAXIMUM AIS

PRIME/DEPLOY IMPACT v AB VEH:
EVENT NUMBER

CDC - N/A -

TOTAL DELTA-V

Model Year, Make, Model, Body Type:

AIRBAG VEHICLE INSPECTION

DATE VEH. INSPECTED / 91

REASON VEHICLE NOT INSPECTED

- (0) Not Required
- (1) Inspection Completed
- (2) Cannot be Located**
- (3) Repaired or Destroyed**
- (5) Refual or Impounded**
- (7) Other*

**Specify:

IMPACT DATA OBTAINED

- (0) No Data Obtained
- (1) CDC Only
- (2) Crush Profile Only
- (3) Trajectory Data Only
- (4) CDC and Crush Profile
- (5) CDC and Trajectory
- (6) Crush and Trajectory
- (7) CDC, Crush & Trajectory

BASIS OF DELTA-V

- (0) Not Computed (Unknown Why)
- (1) CRASH - Damage Only
- (2) CRASH - Damage+Trajectory
- (3) Missing Vehicle Algorithm
- (4) Yielding Object Algorithm
- (5) Unknown Basis
- (6) One Vehicle Beyond Scope
- (7) Collision Beyond Scope
- (8) Insufficient Data

VEHICLE HISTORY

HAS AIRBAG VEHICLE BEEN IN
ANY PRIOR IMPACTS (1,2,9)*

HAS ANY PRIOR MAINTENANCE/SERVICE
BEEN PERFORMED ON SYSTEM(1,2,9)*

NOT TO BROTHER'S KNOWLEDGE
*Describe:

AIRBAG VEHICLE: FLEET 1990 DOBGE SWAG

VIN 1B3XE48K
(PRODUCTION NUMBER DELETED)

MILEAGE 18052

* (1)=Yes, (2)=No, (9)=Unknown

BEST AVAILABLE COPY

DRAFT - 09/04/85

SYSTEM READINESS LAMP
(In Instrument Cluster)

PRE-IMPACT LAMP CONDITION

- (1) Functioning/ProvedOut
- (2) Inoperative
- (9) Unknown

9

DRIVER'S REPORT OF
PRE-IMPACT FLASHING

- (00) No Flashing Reported
- (01) Continuous Flashing
- (02) -- >Number of Flashes
- (11)
- (12) Constant Light
- (19) Flashing, Unkn Number
- (88) Not App (system removed)
- (99) Unknown

99

PERIOD OF PRE-IMPACT FLASHING

- (0) No Flashing
- (1) Same Day as Impact
- (2) Prior Day
- (3) Prior Two Days
- (4) Prior Week
- (5) Prior Month
- (6) Over One Month
- (9) Unknown

9

POST-IMPACT LAMP CONDITION

- (1) Functioning/ProvedOut
- (2) Inoperative
- (9) Unknown

2

POST-IMPACT FLASHING

- (00) No Flashing
- (01) Continuous Flashing
- (02) -- >Number of Flashes
- (11)
- (12) Constant Light
- (19) Flashing, Unkn Number
- (88) Not Appl (removed)
- (99) Unknown

99

AIRBAG VEHICLE
FIRST HARMFUL EVENT

39

- (01) Fire or explosion
- (02) Immersion
- (03) Gas Inhalation
- (04) Fell from vehicle
- (05) Injured in vehicle
- (06) Other noncollision (specify):
- (07) Overturn
- (08) Jackknife with intraunit damage
- Collision With:
- (09) Pedestrian
- (10) Pedalcyclist
- (11) Railway train
- (12) Animal
- (13) Motor vehicle in transport (same roadway)
- (14) Motor vehicle in transport (other roadway)
- (15) Parked motor vehicle
- (16) Other type nonmotorist (specify):
- (17) Thrown or falling object
- (18) Boulder
- Collision with Fixed Object:
- (20) Building
- (21) Impact attenuator/Crash Cushion
- (22) Bridge pier or abutment
- (23) Bridge parapet end
- (24) Bridge rail
- (25) Guardrail
- (26) Concrete traffic barrier
- (27) Median barrier
- (28) Other longitudinal barrier (specify):
- (29) Highway/Traffic sign post
- (30) Overhead sign support
- (31) Luminaire/Light support
- (32) Utility pole
- (33) Other post, pole, or support (specify):
- (34) Culvert
- (35) Curb
- (36) Ditch
- (37) Embankment-earth
- (38) Embankment-rock, stone or concrete
- (39) Fence (wooden, wire, chain link, etc.)
- (40) Wall (stone, rock, metal, etc.)
- (41) Fire hydrant
- (42) Shrubbery
- (43) Tree
- (44) Other fixed object (specify):
- (45) Pavement surface irregularity (pothole, grooved, grates)
- (99) Unknown

IRBAG VEHICLE IMPACT SUMMARY

VEHICLE ROLE

- 0) Non-collision
 1) Striking Unit
 2) Struck Unit
 3) Both Striking and Struck
 9) Unknown

MANNER OF LEAVING SCENE

- 1) Driven
 2) Towed-due to damage
 3) Towed - not for damage
 4) Towed - details unknown
 5) Abandoned
 9) Unknown

NUMBER OF IMPACT EVENTS

- (8) 8 or more, (9) Unknown

- ROLLOVER (0) No Rollover
 (1) First Event
 (2) Subsequent Event
 (3) Yes, Unknown Event
 (9) Unknown

OVERRIDE/UNDERRIDE

- 1) No over/underride
 1) Override - 1st CDC
 3) - Other CDC
 4) Underride - 1st CDC
 6) - Other CDC
 9) Unknown

IRBAG VEHICLE DAMAGE

- CODES: (1) Yes, DAMAGED
 (2) No Damage
 (9) Unknown

LEFT FRONT FENDER DAMAGE

RIGHT FRONT FENDER DAMAGE

CENTER TOP OF GRILLE DAMAGE

FRONT BUMPER E.A. STATUS: Left

- 1) Normal
 2) Extended
 3) Partial Compression
 4) Complete Compression
 5) Not Applicable
 9) Unknown

FIRST AIRBAG VEHICLE IMPACT:

CONFIGURATION

- (0) Struck Object or Pedestrian
 (1) Rear-End
 (2) Head-On
 (3) Rear-to-Rear
 (4) Angle
 (5) Sideswipe - Same Direction
 (6) Sideswipe-Opposite Direct.
 (7) NonCollision Fell from Veh
 (8) Nonimpact Deployment
 (9) Unknown

CDC 12 - FLES - 3OBJECT CONTACTED: CONCRETE FENCE POST

PRIMARY/DEPLOYMENT IMPACT:

EVENT NUMBER

TOTAL DELTA-V 14.4 mphLONGITUDINAL DELTA-V -14.4 mph

CONFIGURATION

- (0) Struck Object or Pedestrian
 (1) Rear-End
 (2) Head-On
 (3) Rear-to-Rear
 (4) Angle
 (5) Sideswipe - Same Direction
 (6) Sideswipe-Opposite Direct.
 (7) NonCollision Fell from Veh
 (8) Nonimpact Deployment
 (9) Unknown

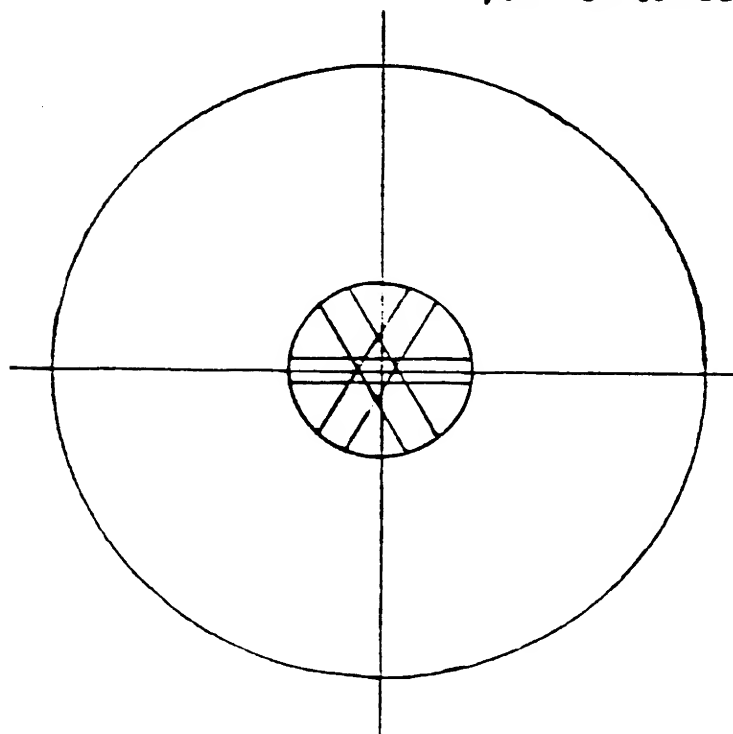
CDC 12 - FCEN - 2OBJECT CONTACTED: 10" DIAMETER UTILITY POLE

NOTES:

AIRBAG SYSTEM DAMAGE	CONDITION OF DEPLOYED BAG	<u>1</u>
CODES: (1) Yes, Damaged* (2) No, Intact (8) Not App.(Removed) (9) Unknown	(1) Bag Intact (2) Split or Torn* (3) Cut by Object in Impact* (4) Cut after Accident* (5) Other (e.g., burned)* (8) N/A (not deployed) (9) Unknown	
AIRBAG MODULE	<u>2</u>	
SENSORS: Left Front	<u>2</u>	
Center Front	<u>8</u>	
Right Front	<u>2</u>	
Rear, Cowl	<u>2</u>	
DIAGNOSTIC MODULE	<u>2</u>	
WIRING	<u>2</u>	
KNEE DIVERter	<u>2</u>	
INDICATION OF DISCONNECTED OR LOOSE ELECTRICAL CONNECTORS	<u>2</u>	
*DESCRIBE System and Bag Damage:		

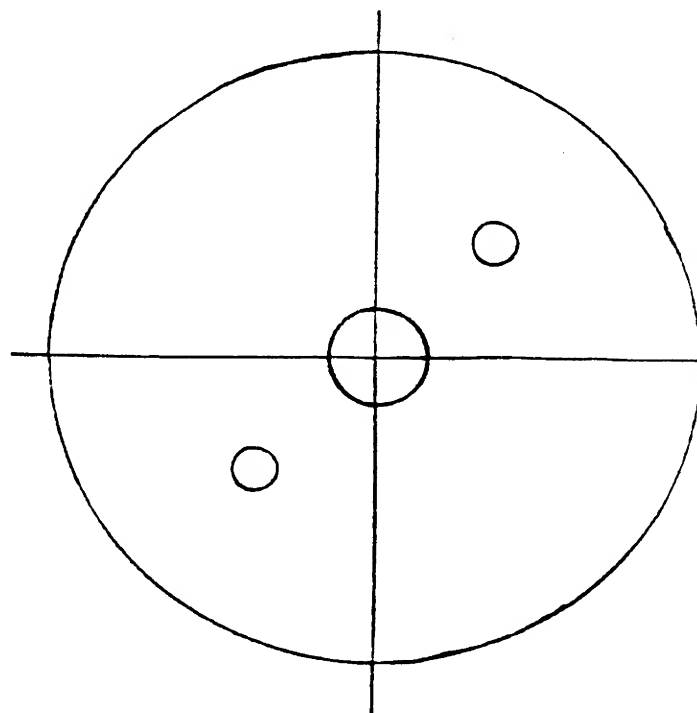
NOTE DAMAGE AND CONTACT MARKS ON AIRBAG DIAGRAMS BELOW:

NO EVIDENCE OF BAG CONTACT



FRONT

TOP



BOTTOM

BACK

OCCUPANTS/DRIVER

AIRBAG SUPPLEMENT

AB-5

OCCUPANTS of AIRBAG CAR

NOTES:

NUMBER OF OCCUPANTS IN VEHICLE
(8) 8 or more1

NUMBER OF INJURED PERSONS

1

MAXIMUM AIS IN AIRBAG VEHICLE

5

(0) No Injury

(1-6) AIS Severity

(7) Injured, Unknown Severity

(9) Unknown

DRIVER AGE 36 SEX FEMALE

NUMBER OF DRIVER INJURIES

19

SOURCE OF BEST INJURY DATA

1

(0) Not injured

(1) Autopsy w/wo med. records

(2) Hospital Medical Records

(3) Emergency Room only

(4) Private physician, Clinic

(5) Lay Coroner Report

(6) EMS Personnel

(7) Interviewee

(8) Police

(9) Unknown

MAXIMUM AIS BY BODY REGION

NASS CODES

REGION
Head/Neck/Face

MAX AIS

CONTACT

340

Chest

445/04

Abdomen

545/04

Leg/Hips

113

Upper (Arms)

——

DRIVER MAXIMUM

545/04SECTION: Extent NONEPortal N/A

DRIVER BELT USAGE: (1) Used (2) Not Used (9) Unknown 1

Evidence: 3-POINT LAP & SHOULDER, POLICE OFFICERS OBSERVATIONS,
SNAG ON BELT WEBBING, ABRASION TO LEFT NECK

DRIVER POSTURE: Any Comments Recorded (1) Yes, (2) No 1

Describe driver's posture and position on seat including specific comments on head, torso, buttocks, legs and feet. Also note hand and arm position. Did driver brace before crash? Describe:

SLUMPED FORWARD AT IMPACT, AGAINST OR WITHIN A CLOSE
PROXIMITY TO STEERING WHEEL

DRIVER FOREIGN OBJECTS: Comments Recorded (1) Yes, (2) No 1

Was driver wearing contact lenses or eyeglasses? Or holding any foreign object at the time of the impact (packages on lap, pipe, food, bottle, cigarette, etc.)? Did any lenses, objects, or jewelry play any role?:

JEWELRY PIN WORN OVER LEFT CHEST, EARRINGS

DRIVER COMMENTS: Comments Recorded (1) Yes, (2) No 2

Was the driver aware that the vehicle was equipped with a supplemental restraint system? Did driver offer any comments on smoke, noise, etc.? Did the driver comment on the airbag as a restraint system? Describe:

FATAL WITHIN 4 HOURS OF CRASH

PASSENGER-AIRBAG CONTACT (1) Yes, (2) No, (9) Unknown 8

Describe: NO PASSENGER

APPENDIX D

NASS Vehicle Forms



GENERAL VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number

2. Case Number - Stratum

3. Vehicle Number

VEHICLE IDENTIFICATION

4. Vehicle Model Year

Code the last two digits of the model year
(99) Unknown

5. Vehicle Make (specify):

DODGE

Applicable codes are found in your
NASS CDS Data Collection, Coding, and
Editing Manual.
(99) Unknown

6. Vehicle Model (specify):

SHADOW

Applicable codes are found in your
NASS CDS Data Collection, Coding, and
Editing Manual.
(999) Unknown

7. Body Type

Note: Applicable codes are found on
the back of this page.

8. Vehicle Identification Number

1B3XP48K5LN

Left justify; Slash zeros and letter Z (0 and Z)
No VIN - Code all zeros
Unknown - Code all nine's

OFFICIAL RECORDS

9. Police Reported Vehicle Disposition

- (0) Not towed due to vehicle damage
- (1) Towed due to vehicle damage
- (9) Unknown

10. Police Reported Travel Speed

Code to the nearest mph (NOTE: 00 means
less than 0.5 mph)
(97) 96.5 mph and above
(99) Unknown

11. Police Reported Alcohol Presence

- (0) No alcohol present
- (1) Yes (alcohol present)
- (7) Not reported
- (8) No driver present
- (9) Unknown

Note: See variables 37 through 55
(Page 4) for Information on Other Drugs

12. Alcohol Test Result for Driver

- Code actual value (decimal implied before
first digit - 0.xx)
- (95) Test refused
- (96) None given
- (97) AC test performed, results unknown
- (98) No driver present
- (99) Unknown

Source

ACCIDENT RELATED

13. Speed Limit

- (00) No statutory limit
- Code posted or statutory speed limit
- (99) Unknown

14. Attempted Avoidance Maneuver

- (00) No impact
- (01) No avoidance actions
- (02) Braking (no lockup)
- (03) Braking (lockup)
- (04) Braking (lockup unknown)
- (05) Releasing brakes
- (06) Steering left
- (07) Steering right
- (08) Braking and steering left
- (09) Braking and steering right
- (10) Accelerating
- (11) Accelerating and steering left
- (12) Accelerating and steering right
- (97) No driver present
- (98) Other action (specify):

(99) Unknown

15. Accident Type

Applicable codes may be found on the back
of page two of this field form

- (00) No impact
- Code the number of the diagram that
best describes the accident circumstance
- (98) Other accident type (specify):

(99) Unknown

**** SKIP TO VARIABLE GV37 IF GV07 DOES NOT EQUAL 01-49 ****

CODES FOR BODY TYPE

CDS APPLICABLE VEHICLES

Automobiles

- (01) Convertible (excludes sun-roof, t-bar)
- (02) 2-door sedan, hardtop, coupe
- (03) 3-door/2-door hatchback
- (04) 4-door sedan, hardtop
- (05) 5-door/4-door hatchback
- (06) Station wagon (excluding van and truck based)
- (08) Other automobile type (specify):

(09) Unknown automobile type

Automobile Derivatives

- (10) Auto based pickup (includes El Camino, Caballero, Ranchero, and Brat)
- (11) Auto based panel (cargo station wagon, includes auto based ambulance/hearse)
- (12) Large limousine—more than four side doors or stretched chassis

Utility Vehicles

- (13) Short utility—not truck based (includes Jeep CJ-5, Jeep CJ-7, Renegade, Landrover, Pre-78 Bronco, Landcruiser, Thing)
- (14) Truck based utility (2-door; includes Blazer, Bronco—78 on, Bronco II, Jimmy, Ramcharger, Cherokee, Trailduster, Scout)

Van Based Light Trucks ($\leq 10,000$ lbs GVWR)

- (20) Minivan (Lumina APV, Astro, Caravan, Plymouth Vista, Aerostar, Safari, Voyager [84 and after], Dodge Vista, Mini Ram Van, Toyota Cargo Van, Toyota Van, Vanagon, VW Bus, Kombi)
- (21) Standard van (Sportvan, Chevy Van, Club Wagon, Ford Econoline, Ram Van, Chateau, Ram Wagon, Vandura, Rally, Voyager [83 and before], Beauville, Sportsman)
- (28) Other van type (Hi-Cube Van, Kary) (specify):

(29) Unknown van type

Light Conventional Trucks (Pickup Style Cab, $\leq 10,000$ lbs GVWR)

- (30) Compact pickup ($<4,500$ lbs. GVWR, S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-15 Pup, Mazda Pickup, Mitsubishi Truck, Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup)
- (31) Standard pickup (4,500 to 10,000 lbs. GVWR, C10 - C30, K10 - K30, T10, D100 - D350, W150 - W350, F100 - F350, Comanche, J10 - J30, Dakota)
- (32) Pickup with slide-in camper
- (33) Truck based station wagon (4-door; includes Suburban, Travelall, Wagoneer)
- (34) Light truck based suburban limousine
- (35) Convertible pickup
- (39) Unknown (pickup style) light conventional truck type

Other Light Trucks ($\leq 10,000$ lbs GVWR)

- (40) Cab chassis based (includes rescue vehicle, light stake, dump, and tow truck)
- (41) Truck based panel
- (42) Light truck based motorhome (chassis mounted)
- (47) Other light conventional truck type (not a pickup—includes step vans $\leq 10,000$ lbs GVWR, Grumman LLV vehicle) (specify):

- (48) Unknown other light truck type (not a pickup)
- (49) Unknown light vehicle type (automobile, van, or light truck)

OTHER VEHICLES

Buses (Excludes Van Based)

- (50) School bus (designed to carry students, not cross country or transit)
- (58) Other bus type (e.g., transit, intercity, bus based motorhome) (specify):

(59) Unknown bus type

Medium/Heavy Trucks ($>10,000$ lbs GVWR)

- (60) Step van
- (61) Single unit straight truck ($10,000$ lbs $<$ GVWR $\leq 26,000$ lbs)
- (62) Single unit straight truck ($>26,000$ lbs GVWR)
- (63) Medium/heavy truck based motorhome
- (64) Truck-tractor with no cargo trailer
- (65) Truck-tractor pulling one trailer
- (66) Truck-tractor pulling two or more trailers
- (67) Truck-tractor (unknown if pulling trailer)
- (68) Unknown medium/heavy truck type
- (69) Unknown truck type (light/medium/heavy)

Motored Cycles (Does Not Include All-Terrain Vehicles/Cycles)

- (70) Motorcycle
- (71) Moped (motorized bicycle)
- (78) Other motored cycle type (minibike, motorscooter) (specify):

(79) Unknown motored cycle type

Other Vehicles

- (80) ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle)
- (88) Other vehicle type (specify):

(99) Unknown body type

OCCUPANT RELATED**16. Driver Presence in Vehicle**

- (0) Driver not present
(1) Driver present
(9) Unknown

17. Number of Occupants This Vehicle

- (00-96) Code actual number of occupants for this vehicle
(97) 97 or more
(99) Unknown

18. Number of Occupant Forms Submitted**VEHICLE WEIGHT ITEMS****19. Vehicle Curb Weight**

2642 Code weight to nearest 100 pounds.

- (010) Less than 1050 pounds
(135) 13,500 lbs or more
(999) Unknown

Source: _____

20. Vehicle Cargo Weight

_____ Code weight to nearest 100 pounds.

- (00) Less than 50 pounds
(97) 9,650 lbs or more
(99) Unknown

RECONSTRUCTION DATA**21. Towed Trailing Unit**

- (0) No towed unit
(1) Yes—towed trailing unit
(9) Unknown

22. Documentation of Trajectory Data for This Vehicle

- (0) No
(1) Yes

23. Post Collision Condition of Tree or Pole (for Highest Delta V)

- (0) Not collision (for highest delta V) with tree or pole
(1) Not damaged
(2) Cracked/sheared
(3) Tilted <45 degrees
(4) Tilted ≥45 degrees
(5) Uprooted tree
(6) Separated pole from base
(7) Pole replaced
(8) Other (specify): _____
(9) Unknown

24. Rollover

- (0) No rollover (no overturning)

Rollover (primarily about the longitudinal axis)

- (1) Rollover, 1 quarter turn only
(2) Rollover, 2 quarter turns
(3) Rollover, 3 quarter turns
(4) Rollover, 4 or more quarter turns (specify): _____

- (5) Rollover—end-over-end (i.e., primarily about the lateral axis)

- (9) Rollover (overturn), details unknown

OVERRIDE/UNDERRIDE (THIS VEHICLE)**25. Front Override/Underride (this vehicle)****26. Rear Override/Underride (this vehicle)**

- (0) No override/underride, or not an end-to-end impact

Override (see specific CDC)

- (1) 1st CDC
(2) 2nd CDC
(3) Other not automated CDC (specify): _____

Underride (see specific CDC)

- (4) 1st CDC
(5) 2nd CDC
(6) Other not automated CDC (specify): _____

- (7) Medium/heavy truck or bus override
(9) Unknown

HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V

Values: (000)-(359) Code actual value

- (997) Noncollision
(998) Impact with object
(999) Unknown

27. Heading Angle for This Vehicle**28. Heading Angle for Other Vehicle**

Category	Configuration	ACCIDENT TYPES (Includes Intent)					
I. Single Driver	A. Right Roadside Departure	 01 DRIVE OFF ROAD	 02 CONTROL/ TRACTION LOSS	 03 AVOID COLLISION WITH VEH., PED., ANIM.	04 SPECIFICS OTHER	05 SPECIFICS UNKNOWN	
	B. Left Roadside Departure	 06 DRIVE OFF ROAD	 07 CONTROL/ TRACTION LOSS	 08 AVOID COLLISION WITH VEH., PED., ANIM.	09 SPECIFICS OTHER	10 SPECIFICS UNKNOWN	
	C. Forward Impact	 11 PARKED VEH.	 12 STA. OBJECT	 13 PEDESTRIAN/ ANIMAL	 14 END DEPARTURE	15 SPECIFICS OTHER	16 SPECIFICS UNKNOWN
II. Same Trafficway Same Direction	D. Rear-End	 20 STOPPED 21, 22, 23	 22 SLOWER 25, 26, 27	 24 DECEL. 28, 30, 31	 26 AVOID COLLISION WITH VEH.	 28 AVOID COLLISION WITH OBJECT	(EACH • 32) SPECIFICS OTHER (EACH • 33) SPECIFICS UNKNOWN
	E. Forward Impact	 34 CONTROL/ TRACTION LOSS	 36 CONTROL/ TRACTION LOSS	 38 AVOID COLLISION WITH VEH.	 40 AVOID COLLISION WITH OBJECT	(EACH • 42) SPECIFICS OTHER (EACH • 43) SPECIFICS UNKNOWN	
	F. Sideswipe Angle	 44 LATERAL MOVE	 46 LATERAL MOVE	(EACH • 48) SPECIFICS OTHER (EACH • 49) SPECIFICS UNKNOWN			
III. Same Trafficway Opposite Direction	G. Head-On	 50 LATERAL MOVE	 51 LATERAL MOVE	(EACH • 52) SPECIFICS OTHER (EACH • 53) SPECIFICS UNKNOWN			
	H. Forward Impact	 54 CONTROL/ TRACTION LOSS	 56 CONTROL/ TRACTION LOSS	 58 AVOID COLLISION WITH VEH.	 60 AVOID COLLISION WITH OBJECT	(EACH • 62) SPECIFICS OTHER (EACH • 63) SPECIFICS UNKNOWN	
	I. Sideswipe Angle	 64 LATERAL MOVE	 65 LATERAL MOVE	(EACH • 66) SPECIFICS OTHER (EACH • 67) SPECIFICS UNKNOWN			
IV. Change Trafficway Vehicle Turning	J. Turn Across Path	 68 INITIAL OPPOSITE DIRECTIONS	 70 INITIAL SAME DIRECTIONS	 72 INITIAL SAME DIRECTIONS	(EACH • 74) SPECIFICS OTHER (EACH • 75) SPECIFICS UNKNOWN		
	K. Turn Into Path	 76 TURN INTO SAME DIRECTION	 78 TURN INTO SAME DIRECTION	 80 TURN INTO OPPOSITE DIRECTIONS	 82 TURN INTO OPPOSITE DIRECTIONS	(EACH • 84) SPECIFICS OTHER (EACH • 85) SPECIFICS UNKNOWN	
V. Intersecting Paths (Vehicle Damage)	L. Straight Paths	 86 VEH. INTERSECT	 88 VEH. INTERSECT	(EACH • 90) SPECIFICS OTHER (EACH • 91) SPECIFICS UNKNOWN			
VI. Miscellaneous	M. Backing Etc.	 92 BACKING VEH.	 93 BACKING VEH.	98 Other Accident Type 99 Unknown Accident Type 00 No Impact			

29. Basis for Total Delta V (Highest) 2

Delta V Calculated

- (1) CRASH program - damage only routine
- (2) CRASH program - damage and trajectory routine
- (3) Missing vehicle algorithm

Delta V Not Calculated

- (4) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.
- (5) All vehicles within scope (CDC applicable) of CRASH program but one of the collision conditions is beyond the scope of the CRASH program or other acceptable reconstruction techniques, regardless of adequacy of damage data.
- (6) All vehicles and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available.

COMPUTER GENERATED DELTA V

Secondary Highest

30. Total Delta V

14.4 Nearest mph

(NOTE: 00 means less than
0.5 mph)
(97) 96.5 mph and above
(99) Unknown

31. Longitudinal Component of
Delta V+ 14
-14.4 Nearest mph

(NOTE: 00 means greater than
-0.5 and less than +0.5 mph)
(± 97) ± 96.5 mph and above
(99) Unknown

Secondary Highest

32. Lateral Component of Delta V

0.0 Nearest mph

(NOTE: 00 means greater than
-0.5 and less than +0.5 mph)
(± 97) ± 96.5 mph and above
(99) Unknown

33. Energy Absorption

019700
19655.9 Nearest 100 foot-lbs

(NOTE: 0000 means less than 50 Foot-Lbs)
(9997) 999,650 foot-lbs or more
(9999) Unknown

34. Confidence in Reconstruction Program
Results (for Highest Delta V)

- (0) No reconstruction
- (1) Collision fits model - results appear reasonable
- (2) Collision fits model - results appear high
- (3) Collision fits model - results appear low
- (4) Borderline reconstruction - results appear reasonable

35. Type of Vehicle Inspection

- (0) No Inspection
- (1) Complete inspection
- (2) Partial inspection (specify):

36. Is this an AOPS Vehicle?

- (0) No
- (1) Yes

IS OLDMISS APPLICABLE FOR THIS VEHICLE? [] YES [☒] NO
IF YES: IS A COMPLETED OLDMISS PROGRAM SUMMARY INCLUDED? [] YES [] NO

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37. Police Reported Other Drug Presence ☒

- (0) No other drugs present
- (1) Yes (other drug present)
- (7) Not reported
- (8) No driver present
- (9) Unknown

38. Police Reported Observation/Perception Test Type For Driver ☒

- (0) No observation/perception test given
- (1) Drug recognition technician (DRT) determination
- (2) Behavioral
- (3) Other physical observation/perception determination (specify):

- (7) Other observation/perception test
- (8) No driver present

- (9) Unknown if observation/perception test given

39. Other Drug Specimen Test Type For Driver ☒

- (0) No specimen test given
- (1) Blood test
- (2) Urine test
- (3) Other specimen tests (specify):

- (7) Unspecified specimen test
- (8) No driver present
- (9) Unknown if specimen test given

OTHER DRUGS TEST RESULTS FOR DRIVER

	Observation/ Perception Test Results	Specimen Test Results
Narcotic Drug	40. <u>0</u>	41. <u>1</u>
Depressant Drug	42. <u>0</u>	43. <u>1</u>
Stimulant Drug	44. <u>0</u>	45. <u>1</u>
Hallucinogen Drug	46. <u>0</u>	47. <u>1</u>
Cannabinoid Drug	48. <u>0</u>	49. <u>1</u>
Phencyclidine (PCP) Drug	50. <u>0</u>	51. <u>1</u>
Inhalant Drug	52. <u>0</u>	53. <u>1</u>
Other Drug (Excluding Nicotine, Aspirin, Alcohol, Drugs Administered Post-Crash)	54. <u>0</u>	55. <u>1</u>

Codes For Observation/Perception Test Results

- (0) No observation/perception test given
- (1) Passed observation/perception test
- (2) Failed observation/perception test
- (3) Observation/perception test given—
results unknown
- (8) No driver present
- (9) Unknown if observation/perception
test given

Codes for Specimen Test Results

- (0) No specimen test given
- (1) Drug not found in specimen
- (2) Drug found in specimen
- (8) No driver present
- (9) Unknown if specimen test given

*** IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV35 = 0), ***
DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS

*** IF GV07 DOES NOT EQUAL 01-49, DO NOT COMPLETE ***
THE EXTERIOR VEHICLE, INTERIOR VEHICLE,
OCCUPANT ASSESSMENT, AND OCCUPANT INJURY FORMS.



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**NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM**

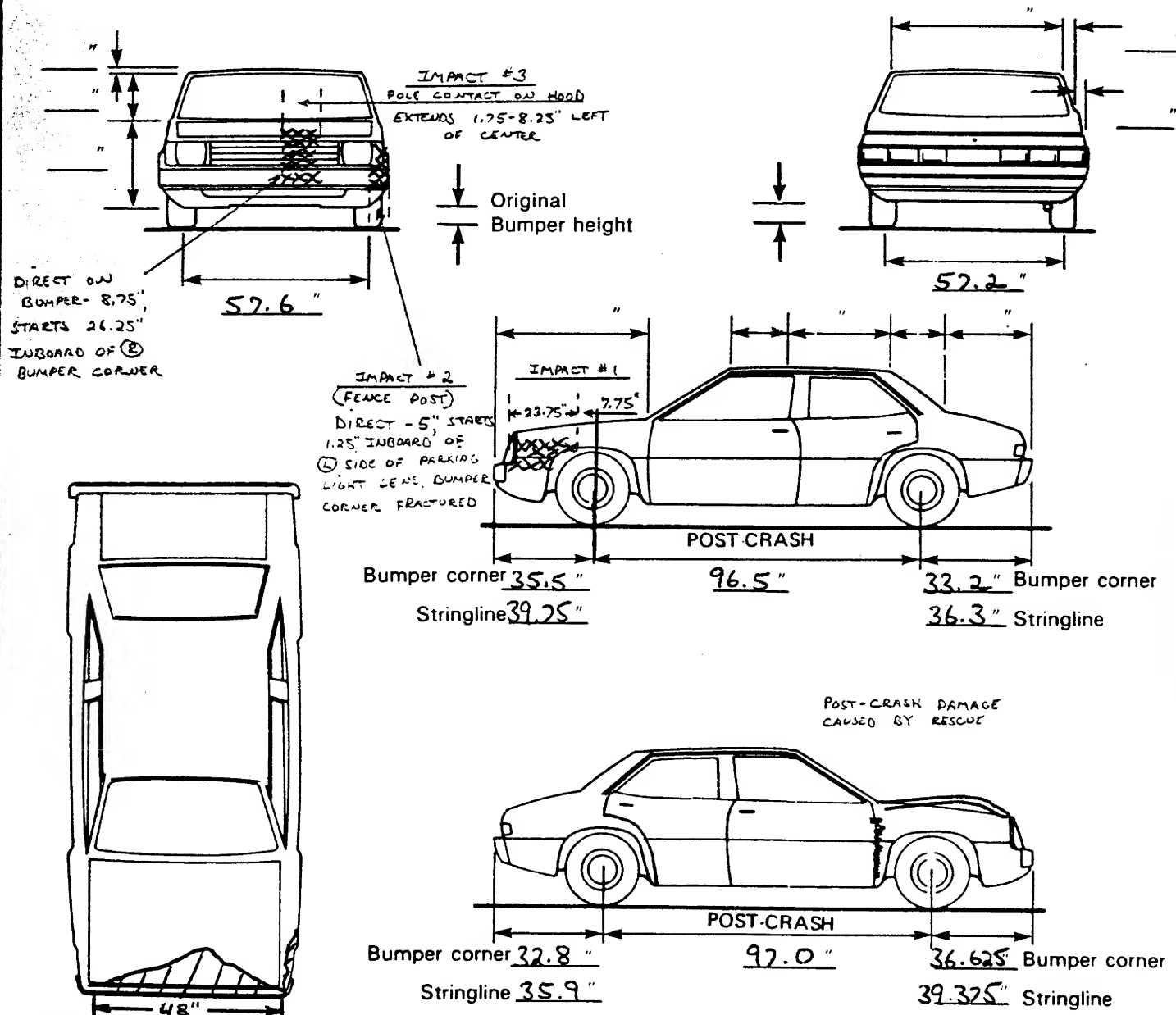
VEHICLE IDENTIFICATION

LOCATOR

CRUSH PROFILE

VEHICLE DAMAGE SKETCH

TIRE - WHEEL DAMAGE		ORIGINAL SPECIFICATIONS		WHEEL STEER ANGLES	
a. Rotation physically restricted	b. Tire deflated	Wheelbase	<u>97.0</u>	(For locked front wheels or displaced rear axles only)	
RF <u>2</u>	RF <u>2</u>	Overall Length	<u>171.7"</u>	RF \pm _____°	
LF <u>2</u>	LF <u>1</u>	Maximum Width	<u>67.3"</u>	LF \pm _____°	
RR <u>2</u>	RR <u>2</u>	Curb Weight	<u>2642</u>	RR \pm _____°	
LR <u>2</u>	LR <u>2</u>	Average Track	<u>57.4</u>	LR \pm _____°	
(1) Yes (2) No (8) NA (9) Unk.		Front Overhang	<u>38.3</u>	Within ± 5 degrees	
TYPE OF TRANSMISSION		Rear Overhang	<u>36.4</u>	DRIVE WHEELS	
<input type="checkbox"/> Manual	<input checked="" type="checkbox"/> <u>3-SPEED</u> Automatic	Engine Size: cyl./ displ.	<u>4/2.5 liter</u>	<input checked="" type="checkbox"/> FWD <input type="checkbox"/> RWD <input type="checkbox"/> 4WD	
		Undeformed End Width	<u>57.5"</u>	Approximate Cargo Weight <u>< 50 LBS</u>	



NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewall, etc.). If pulling trailer, sketch type of trailer and damage received on the back of this page. Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.

CDC WORKSHEET

CODES FOR OBJECT CONTACTED:

01-30—Vehicle Number

Noncollision

(31) Overturn—rollover

(32) Fire or explosion

(33) Jackknife

(34) Other intraunit damage (specify):

(35) Noncollision injury

(38) Other noncollision (specify):

(39) Noncollision—details unknown

Collision with Fixed Object

(41) Tree (≤ 4 inches in diameter)(42) Tree (> 4 inches in diameter)

(43) Shrubbery or bush

(44) Embankment

(45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post

(50) Pole or post (≤ 4 inches in diameter)(51) Pole or post (> 4 but ≤ 12 inches in diameter)(52) Pole or post (> 12 inches in diameter)

(53) Pole or post (diameter unknown)

(54) Concrete traffic barrier

(55) Impact attenuator

(56) Other traffic barrier (specify):

(57) Fence

(58) Wall

(59) Building

(60) Ditch or Culvert

(61) Ground

(62) Fire hydrant

(63) Curb

(64) Bridge

(68) Other fixed object (specify):

(69) Unknown fixed object

Collision With Nonfixed Object

(71) Motor vehicle not in transport

(72) Pedestrian

(73) Cyclist or cycle

(74) Other nonmotorist or conveyance (specify):

(75) Vehicle occupant

(76) Animal

(77) Train

(78) Trailer, disconnected in transport

(88) Other nonfixed object (specify):

(89) Unknown nonfixed object

(98) Other event (specify):

(99) Unknown event or object

DEFORMATION CLASSIFICATION BY EVENT NUMBER

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force (degrees)	Incremental Value of Shift	(3) Deformation Location	(4) Specific Longitudinal or Lateral Location	(5) Specific Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
01	57	360	00	F	L	E	S	03
02	57	360	00	F	L	E	E	01
03	51	360	00	F	C	E	N	02
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---

COLLISION DEFORMATION CLASSIFICATION

HIGHEST DELTA "V"

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Specific Longitudinal or Lateral Location	(5) Specific Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. <u>03</u>	5. <u>51</u>	6. <u>12</u>	7. <u>F</u>	8. <u>C</u>	9. <u>E</u>	10. <u>N</u>	11. <u>02</u>

Second Highest Delta "V"

12. <u>02</u>	13. <u>52</u>	14. <u>12</u>	15. <u>F</u>	16. <u>L</u>	17. <u>E</u>	18. <u>E</u>	19. <u>01</u>
---------------	---------------	---------------	--------------	--------------	--------------	--------------	---------------

CRUSH PROFILE

(The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. ALL MEASUREMENTS ARE IN INCHES.)

HIGHEST DELTA "V"

20. L	21. C1	C2	C3	C4	C5	C6	22. + - D
<u>048</u>	<u>00</u>	<u>06</u>	<u>13</u>	<u>07</u>	<u>02</u>	<u>00</u>	<u>002</u>

Second Highest Delta "V"

23. L	24. C1	C2	C3	C4	C5	C6	25. + - D

26. Are CDCs Documented but Not Coded on The Automated File?

- (0) No
(1) Yes

1

27. Researcher's Assessment of Vehicle Disposition

- (0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown

1

28. Original Wheelbase

92.0 Code to the nearest tenth of an inch
(9999) Unknown

0920

29. Is This A Multi-Stage Manufactured Vehicle
And/Or A Certified Altered Vehicle?

0

- (0) No post manufacturer modifications
(1) Yes - post manufacturer modifications
(specify): _____

(Include photograph of CERTIFICATION
PLACARD in case report)

- (9) Unknown if vehicle is modified

30. Fire Occurrence

0

- (0) No fire

Yes, fire occurred

- (1) Minor
(2) Major
(9) Unknown

31. Origin of Fire

0

- (0) No fire
(1) Vehicle exterior (front, side, back, top)
(2) Exhaust system
(3) Fuel tank (and other fuel retention
system parts)
(4) Engine compartment
(5) Cargo/trunk compartment
(6) Instrument panel
(7) Passenger compartment area
(8) Other location (specify): _____

- (9) Unknown

32. Type of Fuel Tank

1

- (0) No fuel tank (electrical vehicle)
(1) Metallic
(2) Non-metallic
(9) Unknown

*** STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED ***
(I.E., GV09 = 0 OR 9), DO NOT COMPLETE THE INTERIOR VEHICLE FORM.



INTERIOR VEHICLE FORM

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NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~ — —

2. Case Number — ~~Stratum~~ 91-12

3. Vehicle Number 01

INTEGRITY

4. Passenger Compartment Integrity 00

(00) No integrity loss

Yes, Integrity Was Lost Through

(01) Windshield

(02) Door (side)

(03) Door/hatch (back door)

(04) Roof

(05) Roof glass

(06) Side window

(07) Rear window (backlight)

(08) Roof and roof glass

(09) Windshield and door (side)

(10) Windshield and roof

(11) Side and rear window (side window and backlight)

(12) Windshield and side window

(13) Door and side window

(98) Other combination of above (specify):

(99) Unknown

Door, Tailgate Or Hatch Opening

5. LF 1 6. RF 1 7. LR 1 8. RR 1 9. TG/H 1

(0) No door/gate/hatch

(1) Door/gate/hatch remained closed and operational

(2) Door/gate/hatch came open during collision

(3) Door/gate/hatch jammed shut

(8) Other (specify):

(9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch Opening in Collision. If IV05-IV09 ≠ 2, Then Code 0.

10. LF 0 11. RF 0 12. LR 0 13. RR 0 14. TG/H 0

(0) No door/gate/hatch or door not opened

Door, Tailgate, or Hatch Came Open During Collision

(1) Door operational (no damage)

(2) Latch/striker failure due to damage

(3) Hinge failure due to damage

(4) Door structure failure due to damage

(5) Door support (i.e., pillar, sill, roof side rail, etc.) failure due to damage

(6) Latch/striker and hinge failure due to damage

(8) Other failure (specify):

(9) Unknown

GLAZING

Glazing Damage from Impact Forces

15. WS 0 16. LF 0 17. RF 0 18. LR 0 19. RR 0

20. BL 0 21. Roof 8 22. Other 8

(0) No glazing damage from impact forces

(2) Glazing in place and cracked from impact forces

(3) Glazing in place and holed from impact forces

(4) Glazing out-of-place (cracked or not) and not holed from impact forces

(5) Glazing out-of-place and holed from impact forces

(6) Glazing disintegrated from impact forces

(7) Glazing removed prior to accident

(8) No glazing

(9) Unknown if damaged

Glazing Damage from Occupant Contact

23. WS 0 24. LF 0 25. RF 0 26. LR 0 27. RR 0

28. BL 0 29. Roof 0 30. Other 0

(0) No occupant contact to glazing or no glazing

(1) Glazing contacted by occupant but no glazing damage

(2) Glazing in place and cracked by occupant contact

(3) Glazing in place and holed by occupant contact

(4) Glazing out-of-place (cracked or not) by occupant contact and not holed by occupant contact

(5) Glazing out-of-place by occupant contact and holed by occupant contact

(6) Glazing disintegrated by occupant contact

(9) Unknown if contacted by occupant

If No Glazing Damage **And** No Occupant Contact or No Glazing, Then Code IV 31 Through IV 46 As 0

Type of Window/Windshield Glazing

31. WS 0 32. LF 0 33. RF 0 34. LR 0 35. RR 0

36. BL 0 37. Roof 0 38. Other 0

(0) No glazing contact and no damage, or no glazing

(1) AS-1 — Laminated

(2) AS-2 — Tempered

(3) AS-3 — Tempered-tinted

(4) AS-14 — Glass/Plastic

(8) Other (specify):

(9) Unknown

Window Precrash Glazing Status

39. WS 1 40. LF 2 41. RF 2 42. LR 2 43. RR 2

44. BL 2 45. Roof 0 46. Other 0

(0) No glazing contact and no damage, or no glazing

(1) Fixed

(2) Closed

(3) Partially opened

(4) Fully opened

(9) Unknown

INTRUSION WORK SHEET

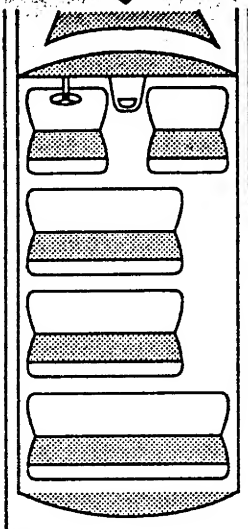
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TOP
VIEW

Longitudinal

Lateral

Lateral



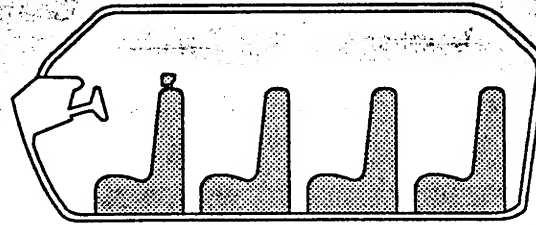
Longitudinal

LEFT SIDE
VIEW

Vertical

Longitudinal

Longitudinal

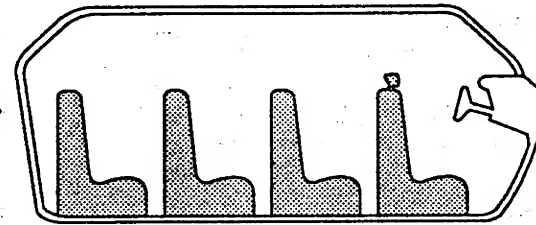


RIGHT SIDE
VIEW

Vertical

Longitudinal

Longitudinal



Vertical

Note: Sketch intruded areas

LOCATION OF INTRUSION	INTRUDED COMPONENT	COMPARISON VALUE	-	INTRUDED VALUE	=	INTRUSION	DOMINANT CRUSH DIRECTION
			-		=		
			-		=		
			-		=		
			-		=		
			-		=		
			-		=		
			-		=		
			-		=		
			-		=		
			-		=		
			-		=		
			-		=		
			-		=		
			-		=		
			-		=		
			-		=		

Document no more than the 15 most severe intrusions

OCCUPANT AREA INTRUSION

Note: If no intrusions, leave variables IV 47-IV 86 blank.

INTRUDING COMPONENT

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Interior Components

- (01) Steering assembly
 (02) Instrument panel left
 (03) Instrument panel center
 (04) Instrument panel right
 (05) Toe pan
 (06) A-pillar
 (07) B-pillar
 (08) C-pillar
 (09) D-pillar
 (10) Door panel (side)
 (12) Roof (or convertible top)
 (13) Roof side rail
 (14) Windshield
 (15) Windshield header
 (16) Window frame
 (17) Floor pan (includes sill)
 (18) Backlight header
 (19) Front seat back
 (20) Second seat back
 (21) Third seat back
 (22) Fourth seat back
 (23) Fifth seat back
 (24) Seat cushion
 (25) Back door/panel (e.g., tailgate)
 (26) Other interior component (specify):

NO INTRUSION

- (27) Side panel - forward of the A-pillar
 (28) Side panel - rear of the A-pillar

Exterior Components

- (30) Hood
 (31) Outside surface of vehicle (specify):
 (32) Other exterior object in the environment
 (specify):
 (33) Unknown exterior object
 (97) Catastrophic
 (98) Intrusion of unlisted component(s)
 (specify):
 (99) Unknown

MAGNITUDE OF INTRUSION

- (1) ≥ 1 inch but < 3 inches
 (2) ≥ 3 inches but < 6 inches
 (3) ≥ 6 inches but < 12 inches
 (4) ≥ 12 inches but < 18 inches
 (5) ≥ 18 inches but < 24 inches
 (6) ≥ 24 inches
 (7) Catastrophic
 (9) Unknown

DOMINANT CRUSH DIRECTION

- (1) Vertical
 (2) Longitudinal
 (3) Lateral
 (7) Catastrophic
 (9) Unknown

Location of Intrusion	Intruding Component	Magnitude of Intrusion	Dominant Crush Direction
1st 47. _____	48. _____	49. _____	50. _____
2nd 51. _____	52. _____	53. _____	54. _____
3rd 55. _____	56. _____	57. _____	58. _____
4th 59. _____	60. _____	61. _____	62. _____
5th 63. _____	64. _____	65. _____	66. _____
6th 67. _____	68. _____	69. _____	70. _____
7th 71. _____	72. _____	73. _____	74. _____
8th 75. _____	76. _____	77. _____	78. _____
9th 79. _____	80. _____	81. _____	82. _____
10th 83. _____	84. _____	85. _____	86. _____

LOCATION OF INTRUSION

Front Seat

- (11) Left
 (12) Middle
 (13) Right

Fourth Seat

- (41) Left
 (42) Middle
 (43) Right

Second Seat

- (21) Left
 (22) Middle
 (23) Right

- (97) Catastrophic
 (98) Other enclosed area (specify):

Third Seat

- (31) Left
 (32) Middle
 (33) Right

- (99) Unknown

CASE NUMBER CA 9112

MISSING DATA

THE FOLLOWING DATA ARE NOT INCLUDED IN THIS CASE:

PAGE NUMBER(S)

66

STEERING COLUMN

87. Steering Column Type

- (1) Fixed column
 (2) Tilt column SET @ CENTER POSITION
 (3) Telescoping column
 (4) Tilt and telescoping column
 (8) Other column type (specify):

(9) Unknown

88. Blank

(This variable is left blank so that numbering consistency can be maintained with the 1988-90 CDS.

XX

89. Blank

(This variable is left blank so that numbering consistency can be maintained with the 1988-90 CDS.

XXX

90. Blank

(This variable is left blank so that numbering consistency can be maintained with the 1988-90 CDS.

XXX

91. Blank

(This variable is left blank so that numbering consistency can be maintained with the 1988-90 CDS.

XXX

1.375" OF LEFT SHEAR
 COMPRESSION

1.625" OF RIGHT SHEAR
 COMPRESSION

92. Steering Rim/Spoke Deformation

- 25 Code actual measured deformation to the nearest inch. SLIGHT AT UPPER 1/2
 (0) No steering rim deformation
 (1-5) Actual measured value
 (6) 6 inches or more
 (8) Observed deformation cannot be measured
 (9) Unknown

93. Location of Steering Rim/Spoke Deformation

(00) No steering rim deformation

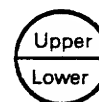
Quarter Sections

- (01) Section A
 (02) Section B
 (03) Section C
 (04) Section D



Half Sections

- (05) Upper half of rim/spoke
 (06) Lower half of rim/spoke
 (07) Left half of rim/spoke
 (08) Right half of rim/spoke



- (09) Complete steering wheel collapse
 (10) Undetermined location
 (99) Unknown

INSTRUMENT PANEL

94. Odometer Reading

018,000
 18,052 miles - Code mileage to the nearest 1,000 miles

- (000) No odometer
 (001) Less than 1,500 miles
 (300) 299,500 miles or more
 (999) Unknown

Source: _____

95. Instrument Panel Damage from Occupant Contact?

- (0) No
 (1) Yes
 (9) Unknown

96. Knee Bolsters Deformed from Occupant Contact?

- (0) No
 (1) Yes CONTACTED, NOT DEFORMED
 (8) Not present
 (9) Unknown

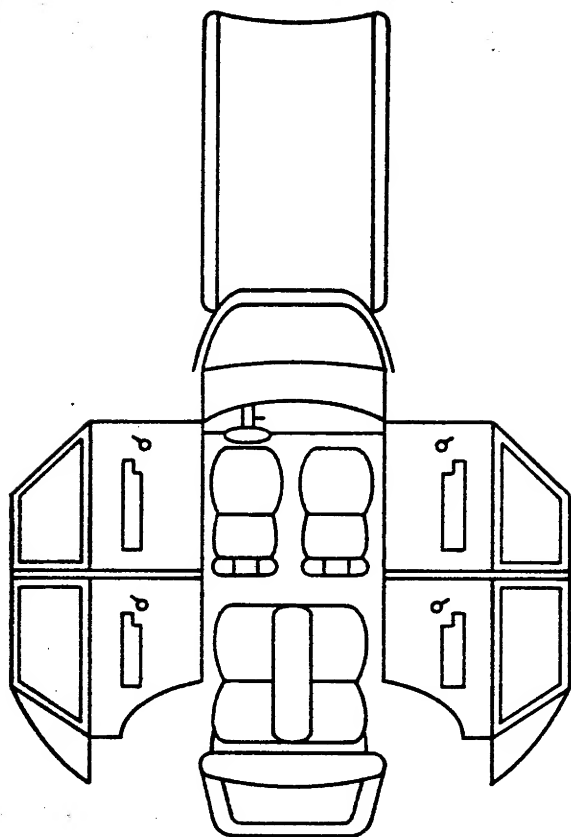
97. Did Glove Compartment Door Open During Collision(s)?

- (0) No
 (1) Yes
 (8) Not present
 (9) Unknown

VEHICLE INTERIOR SKETCHES

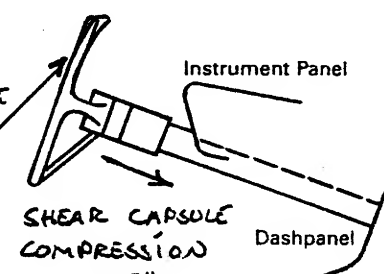
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Note area of ejection/entrapment



LF SEAT SET TO A FORWARD POSITION
(MOVED AT TIME OF INSPECTION)

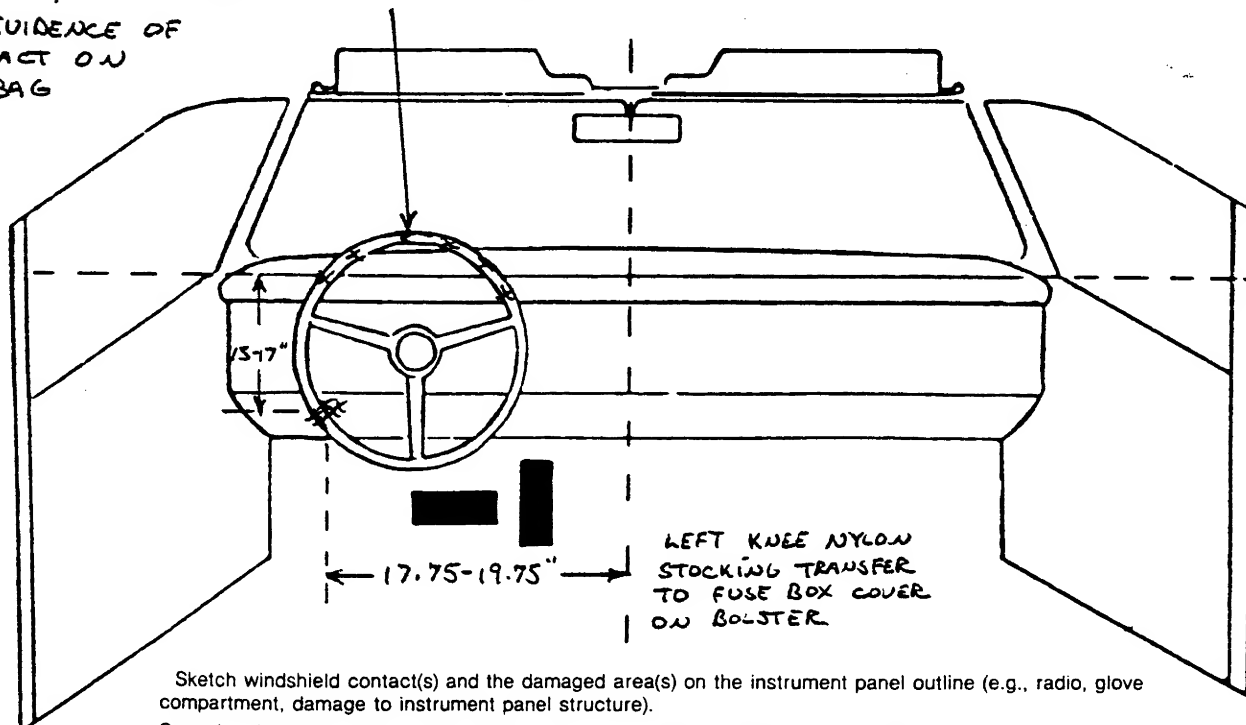
~.25" OF
UPPER RIM
DISPLACEMENT



SHEAR CAPSULE
COMPRESSION
L = 1.375"
R = 1.625"

THORACIC/AIR BAG
BENDING OF UPPER RIM

NO EVIDENCE OF
CONTACT ON
AIR BAG



LEFT KNEE NYLON
STOCKING TRANSFER
TO FUSE BOX COVER
ON BOLSTER

Sketch windshield contact(s) and the damaged area(s) on the instrument panel outline (e.g., radio, glove compartment, damage to instrument panel structure).

Cross hatch contact points, draw spider webs or use other annotation as may be appropriate.

Annotate the contacted area with a letter (begin with A) and list on the Points of Occupant Contact page.

POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A	45/04	1	TORSO/DECK	OCCUPANT INJURY	1
B	13	1	(D) KNEE	NYLON STOCKING TRANSFER	1
C	04	1	TORSO/AIR BAG	1.25" OF RIM BENDING, 1.6" OF SHEAR CAPSULE COMPRESSION	1
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					

CODES FOR INTERIOR COMPONENTS

FRONT

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): _____

LEFT SIDE

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): _____
- (25) Left side window glass or frame

- (26) Left side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (27) Other left side object (specify): _____

RIGHT SIDE

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): _____
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (37) Other right side object (specify): _____

INTERIOR

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): _____
- (44) Head restraint system
- (45) Air bag
- (46) Other occupants (specify): _____
- (47) Interior loose objects

- (48) Child safety seat (specify): _____

- (49) Other interior object (specify): _____

ROOF

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

FLOOR

- (56) Floor including toe pan
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

REAR

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): _____

CONFIDENCE LEVEL OF CONTACT POINT

- (1) Certain
- (2) Probable
- (3) Possible
- (4) Unknown

AUTOMATIC RESTRAINTS

NOTES: Encode the data for each applicable front seat position. The attributes for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
F I R S T	Availability		-	-
	Function		-	-
	Failure		-	-

AIR BAGS

Air Bag System Availability/Function

- (0) Not equipped/not available
- (1) Air bag

Non-functional

- (2) Air bag disconnected (specify): _____

- (3) Air bag not reinstalled
- (9) Unknown

Air Bag System Deployment

- (0) Not equipped/not available
- (1) Air bag deployed during accident
- (2) Air bag deployed inadvertently just prior to accident
- (3) Air bag deployed, accident sequence undetermined
- (4) Nondeployed
- (5) Unknown if deployed
- (9) Unknown

Did Air Bag System Fail?

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): _____

- (9) Unknown

AUTOMATIC BELTS

Automatic (Passive) Belt System Availability/Function

- (0) Not equipped/not available
- (1) 2 point automatic belts
- (2) 3 point automatic belts
- (3) Automatic belts—type unknown

Non-functional

- (4) Automatic belts destroyed or rendered inoperative
- (9) Unknown

Automatic (Passive) Belt System Use

- (0) Not equipped/not available/destroyed or rendered inoperative
- (1) Automatic belt in use
- (2) Automatic belt not in use (manually disconnected, motorized track inoperative)
- (3) Automatic belt use unknown
- (9) Unknown

Automatic (Passive) Belt System Type

- (0) Not equipped/not available
- (1) Non-motorized system
- (2) Motorized system
- (9) Unknown

Proper Use of Automatic (Passive) Belt System

- (0) Not equipped/not available/not used
- (1) Automatic belt used properly
- (2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly

- (3) Automatic shoulder belt worn under arm
- (4) Automatic shoulder belt worn behind back
- (5) Automatic belt worn around more than one person
- (6) Lap portion of automatic belt worn on abdomen
- (7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify): _____

- (8) Other improper use of automatic belt system (specify): _____
- (9) Unknown

Automatic (Passive) Belt Failure Modes During Accident

- (0) Not equipped/not available/not in use
- (1) No automatic belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): _____

- (6) Broken retractor
- (7) Combination of above (specify): _____
- (8) Other automatic belt failure (specify): _____

- (9) Unknown

MANUAL RESTRAINTS

NOTES: Encode the applicable data for each seat position in the vehicle. The attributes for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

If a child safety seat is present, encode the data on the back of this page.

If the vehicle has automatic restraints available, encode the appropriate data on the back of the previous page.

		Left	Center	Right
FIRST	Availability	4	-	4
	Use	04	-	-
	Failure Modes	1	-	-
SECOND	Availability	4	3	4
	Use	-	-	-
	Failure Modes	-	-	-
THIRD	Availability	X		
	Use			
	Failure Modes			
OTHER	Availability	X		
	Use			
	Failure Modes			

Manual (Active) Belt System Availability

- (0) Not available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available – type unknown
- (8) Other belt (specify):

(9) Unknown

Manual (Active) Belt System Use

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify):

- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used – type unknown

(08) Other belt used (specify):

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat – type unknown
- (18) Other belt used with child safety seat (specify):

(99) Unknown if belt used

Manual (Active) Belt Failure Modes During Accident

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify):

- (6) Broken retractor
- (7) Combination of above (specify):

(8) Other manual belt failure (specify):

(9) Unknown

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CHILD SAFETY SEAT FIELD ASSESSMENT

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number		NONE	USED			
1. Type of Child Safety Seat						
2. Child Safety Seat Orientation						
3. Child Safety Seat Harness Usage						
4. Child Safety Seat Shield Usage						
5. Child Safety Seat Tether Usage						
6. Child Safety Seat Make/Model	Specify Below for Each Child Safety Seat					

1. Type of Child Safety Seat

- (0) No child safety seat
- (1) Infant seat
- (2) Toddler seat
- (3) Convertible seat
- (4) Booster seat
- (7) Other type child safety seat (specify):

- (8) Unknown child safety seat type
- (9) Unknown if child safety seat used

2. Child Safety Seat Orientation

- (00) No child safety seat
- Designed for Rear Facing for This Age/Weight
- (01) Rear facing
- (02) Forward facing
- (03) Other orientation (specify):

- (04) Unknown orientation
- Designed for Forward Facing for This Age/Weight
- (11) Rear facing
- (12) Forward facing
- (18) Other orientation (specify):

- (19) Unknown orientation
- Unknown Design or Orientation for This Age/Weight, or Unknown Age/Weight
- (21) Rear facing
- (22) Forward facing
- (28) Other orientation (specify):

(29) Unknown orientation

(99) Unknown if child safety seat used

3. Child Safety Seat Harness Usage

4. Child Safety Seat Shield Usage

5. Child Safety Seat Tether Usage

Note: Options Below Are Used for Variables 3-5.

(00) No child safety seat

Not Designed with Harness/Shield/Tether

(01) After market harness/shield/tether added, not used

(02) After market harness/shield/tether used

(03) Child safety seat used, but no after market harness/shield/tether added

(09) Unknown if harness/shield/tether added or used

Designed with Harness/Shield/Tether

(11) Harness/shield/tether not used

(12) Harness/shield/tether used

(19) Unknown if harness/shield/tether used

Unknown if Designed with Harness/Shield/Tether

(21) Harness/shield/tether not used

(22) Harness/shield/tether used

(29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

6. Child Safety Seat Make/Model

(Specify make/model and occupant number)

HEAD RESTRAINTS/SEAT EVALUATION

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NOTES: Encode the applicable data for each seat position in the vehicle. The attributes for these variables may be found at the bottom of the page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
FIRST	Head Restraint Type/Damage	3	-	3
	Seat Type	01	-	01
	Seat Performance	1	-	1
SECOND	Head Restraint Type/Damage	0	0	0
	Seat Type	05	05	05
	Seat Performance	1	1	1
THIRD	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
OTHER	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			

Head Restraint Type/Damage by Occupant at This Occupant Position

- (0) No head restraints
- (1) Integral — no damage
- (2) Integral — damaged during accident
- (3) Adjustable — no damage
- (4) Adjustable — damaged during accident
- (5) Add-on — no damage
- (6) Add-on — damaged during accident
- (8) Other (specify): _____
- (9) Unknown

Seat Type (This Occupant Position)

- (00) No seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., van type)
- (09) Other seat type (specify): _____
- (99) Unknown

Seat Performance (This Occupant Position)

- (0) No seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks failed
- (4) Seat tracks/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify): _____
- (7) Combination of above (specify): _____
- (8) Other (specify): _____
- (9) Unknown

DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE (I.E. UNUSUAL OCCUPANT CONTACT PATTERN)

EJECTION/ENTRAPMENT DATA

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Complete the following if the researcher has any indications that an occupant was either ejected from or entrapped in the vehicle. Code the appropriate data on the Occupant Assessment Form.

EJECTION No [☒] Yes []

Describe indications of ejection and body parts involved in partial ejection(s):

Occupant Number						
Ejection						
(Note on Vehicle Interior Sketch) Ejection Area						
Ejection Medium						
Medium Status						

Ejection

- (1) Complete ejection
- (2) Partial ejection
- (3) Ejection, unknown degree
- (9) Unknown

(7) Roof

- (8) Other area (e.g., back of pickup, etc.) (specify):

- (9) Unknown

(5) Integral structure

- (8) Other medium (specify):

- (9) Unknown

Ejection Area

- (1) Windshield
- (2) Left front
- (3) Right front
- (4) Left rear
- (5) Right rear
- (6) Rear

Ejection Medium

- (1) Door hatch/tailgate
- (2) Nonfixed roof structure
- (3) Fixed glazing
- (4) Nonfixed glazing (specify):

Medium Status (Immediately Prior to Impact)

- (1) Open
- (2) Closed
- (3) Integral structure
- (9) Unknown

ENTRAPMENT No [☒] Yes []

Describe entrapment mechanism: _____

Component(s): _____

(Note in vehicle interior diagram)

APPENDIX E

NASS Occupant Forms



OCCUPANT ASSESSMENT FORM

1. Primary Sampling Unit Number
2. Case Number ~~Stratum~~ 91-12
3. Vehicle Number 01
4. Occupant Number 01

OCCUPANT'S CHARACTERISTICS

5. Occupant's Age 36
Code actual age at time of accident.
(00) Less than one year old (specify by month):

(97) 97 years and older
(99) Unknown
6. Occupant's Sex 2
(1) Male
(2) Female
(9) Unknown
7. Occupant's Height 63
Code actual height to the nearest inch.
(99) Unknown
8. Occupant's Weight 104-120 112
Code actual weight to the nearest pound.
(999) Unknown
9. Occupant's Role 1
(1) Driver
(2) Passenger
(9) Unknown
10. Occupant's Seat Position 11
Front Seat
(11) Left side
(12) Middle
(13) Right Side
(14) Other (specify): _____
(15) On or in the lap of another occupant
Second Seat
(21) Left side
(22) Middle
(23) Right Side
(24) Other (specify): _____
(25) On or in the lap of another occupant
Third Seat
(31) Left side
(32) Middle
(33) Right Side
(34) Other (specify): _____
(35) On or in the lap of another occupant
Fourth Seat
(41) Left side
(42) Middle
(43) Right Side
(44) Other (specify): _____
(45) On or in the lap of another occupant
(97) In or on unenclosed area
(98) Other seat (specify): _____
(99) Unknown

11. Occupant's Posture 1
(0) Normal posture
(1) Abnormal posture (specify):
SLUMPED FORWARD
(9) Unknown

EJECTION/ENTRAPMENT

12. Ejection 0
(0) No ejection
(1) Complete ejection
(2) Partial ejection
(3) Ejection, unknown degree
(9) Unknown
13. Ejection Area 0
(0) No ejection
(1) Windshield
(2) Left front
(3) Right front
(4) Left rear
(5) Right rear
(6) Rear
(7) Roof
(8) Other area (e.g., back of pickup, etc.)
(specify): _____
(9) Unknown
14. Ejection Medium 0
(0) No ejection
(1) Door/hatch/tailgate
(2) Nonfixed roof structure
(3) Fixed glazing
(4) Nonfixed glazing (specify): _____
(5) Integral structure
(8) Other medium (specify): _____
(9) Unknown
15. Medium Status (Immediately Prior to Impact) 0
(0) No ejection
(1) Open
(2) Closed
(3) Integral structure
(9) Unknown
16. Entrapment 0
(NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)
(0) Not entrapped
(1) Entrapped
(9) Unknown

RESTRAINT SYSTEM AND SEAT EVALUATION**17. Manual (Active) Belt System Availability** 4

- (0) Not available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available—type unknown
- (8) Other belt (specify): _____

(9) Unknown

18. Manual (Active) Belt System Use 04

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify): _____
- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used—type unknown
- (08) Other belt used (specify): _____
- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat—type unknown
- (18) Other belt used with child safety seat (specify): _____
- (99) Unknown if belt used

19. Proper Use of Manual (Active) Belts 1

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat
- Belt Used Improperly
- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): _____
- (8) Other improper use of manual belt system (specify): _____
- (9) Unknown

20. Manual (Active) Belt Failure Modes During Accident 1

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): _____
- (6) Broken retractor
- (7) Combination of above (specify): _____
- (8) Other manual belt failure (specify): _____
- (9) Unknown

21. Air Bag System Availability/Function 1

- (0) Not equipped/not available
- (1) Air bag

Non-functional

- (2) Air bag disconnected (specify): _____
- (3) Air bag not reinstalled
- (9) Unknown

22. Air Bag System Deployment 1

- (0) Not equipped/not available
- (1) Air bag deployed during accident
- (2) Air bag deployed inadvertently just prior to accident
- (3) Air bag deployed, accident sequence undetermined
- (4) Nondeployed
- (5) Unknown if deployed
- (9) Unknown

23. Did Air Bag System Fail? 1

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): _____
- (9) Unknown

Note: See Variables 44 through 48 (Page 5) for Information on Automatic Belts

24. Police Reported Restraint Use 7

- (0) None used
- (1) Police did not indicate restraint use
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt used, type not specified
- (6) Child safety seat
- (7) Other or automatic restraint (specify): 3-POINT LAP + SHOULDER + AIR BAG
- (8) Restrained, type unknown
- (9) Police indicated "unknown"

25. Head Restraint Type/Damage by Occupant at This Occupant Position 3

- (0) No head restraints
- (1) Integral—no damage
- (2) Integral—damaged during accident
- (3) Adjustable—no damage
- (4) Adjustable—damaged during accident
- (5) Add-on—no damage
- (6) Add-on—damaged during accident
- (8) Other (specify): _____
- (9) Unknown

26. Seat Type (This Occupant Position) 01

- (00) Occupant not seated or no seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., van type)
- (09) Other seat type (specify):

(99) Unknown

27. Seat Performance (This Occupant Position) 1

- (0) Occupant not seated or no seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks failed
- (4) Seat track/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify):

(7) Combination of above (specify):

(8) Other (specify):

(9) Unknown

CHILD SAFETY SEAT28. Child Safety Seat Make/Model 000

- (000) No child safety seat
- Applicable codes are found in your NASS CDS Data Collection, Coding, and Editing Manual
- (997) Other make/model (specify):

(998) Unknown make/model

(999) Unknown if child safety seat used

29. Type of Child Safety Seat 0

- (0) No child safety seat
- (1) Infant seat
- (2) Toddler seat
- (3) Convertible seat
- (4) Booster seat
- (7) Other type child safety seat (specify):

(8) Unknown child safety seat type

(9) Unknown if child safety seat used

30. Child Safety Seat Orientation 00

- (00) No child safety seat

Designed for Rear Facing for This Age/Weight

- (01) Rear facing
- (02) Forward facing
- (08) Other orientation (specify):

(09) Unknown orientation

Designed for Forward Facing for This Age/Weight

- (11) Rear facing
- (12) Forward facing
- (18) Other orientation (specify):

(19) Unknown orientation

Unknown Design or Orientation for This Age/Weight, or Unknown Age/Weight

- (21) Rear facing
- (22) Forward facing
- (28) Other orientation (specify):

(29) Unknown orientation

(99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage 0032. Child Safety Seat Shield Usage 0033. Child Safety Seat Tether Usage 00

Note: Options below applicable to Variables OA31-OA33.

- (00) No child safety seat

Not Designed with
Harness/Shield/Tether

- (01) After market harness/shield/tether added, not used
- (02) After market harness/shield/tether used
- (03) Child safety seat used, but no after market harness/shield/tether added
- (09) Unknown if harness/shield/tether added or used

Designed with Harness/Shield/Tether

- (11) Harness/shield/tether not used
- (12) Harness/shield/tether used
- (19) Unknown if harness/shield/tether used

Unknown If Designed with Harness/Shield/Tether

- (21) Harness/shield/tether not used
- (22) Harness/shield/tether used
- (29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

INJURY CONSEQUENCES**34. Injury Severity (Police Rating)** 4

- (0) O—No injury
- (1) C—Possible injury
- (2) B—Nonincapacitating injury
- (3) A—Incapacitating injury
- (4) K—Killed
- (5) U—Injury, severity unknown
- (6) Died prior to accident
- (9) Unknown

35. Treatment—Mortality 1

- (0) No treatment
- (1) Fatal
- (2) Fatal—ruled disease

Nonfatal

- (3) Hospitalized
- (4) Transported and released
- (5) Treatment at scene—nontransported
- (6) Treatment later
- (8) Treatment—other (specify):

(9) Unknown

36. Type of Medical Facility (for Initial Treatment) 2

- (0) Not treated at a medical facility
- (1) Trauma center
- (2) Hospital
- (3) Medical clinic
- (4) Physician's office
- (5) Treatment later at medical facility
- (8) Other (specify):

(9) Unknown

37. Hospital stay 00

- Code number of days (up through 60) that the occupant stayed in the hospital
- (00) Not hospitalized
 - (61) 61 days or more
 - (99) Unknown

38. Working Days Lost 62

- Code the number of days (up through 60) that the occupant lost from work due to the accident
- (00) No working days lost
 - (61) 61 days or more
 - (62) Fatally injured
 - (97) Not working prior to accident
 - (99) Unknown

39. Time to Death 04

- Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 + n up through 30 days = 60)
- (00) Not fatal
 - (96) Fatal—ruled disease
 - (99) Unknown

40. 1st Medically Reported Cause of Death 01**41. 2nd Medically Reported Cause of Death** 00**42. 3rd Medically Reported Cause of Death** 00

- Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death
- (00) Not fatal or no additional causes
 - (97) Other result (specify):

(99) Unknown

43. Number of Recorded Injuries for This Occupant 19

- Code the actual number of injuries recorded for this occupant.
- (00) No recorded injuries
 - (97) Injured, details unknown
 - (99) Unknown if injured

44. Automatic (Passive) Belt System Availability/ Function 0

- (0) Not equipped/not available
- (1) 2 point automatic belts
- (2) 3 point automatic belts
- (3) Automatic belts-type unknown

Non-functional

- (4) Automatic belts destroyed or rendered inoperative
- (9) Unknown

45. Automatic (Passive) Belt System Use 0

- (0) Not equipped/not available/destroyed or rendered inoperative
- (1) Automatic belt in use
- (2) Automatic belt not in use (manually disconnected, motorized track inoperative) (specify): _____

- (3) Automatic belt use unknown
- (9) Unknown

46. Automatic (Passive) Belt System Type 0

- (0) Not equipped/not available
- (1) Non-motorized system
- (2) Motorized system
- (9) Unknown

47. Proper Use of Automatic (Passive) Belt System 0

- (0) Not equipped/not available/not used
- (1) Automatic belt used properly
- (2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly

- (3) Automatic shoulder belt worn under arm
- (4) Automatic shoulder belt worn behind back
- (5) Automatic belt worn around more than one person
- (6) Lap portion of automatic belt worn on abdomen
- (7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify): _____

- (8) Other improper use of automatic belt system (specify): _____
- (9) Unknown

48. Automatic (Passive) Belt Failure Modes During Accident 0

- (0) Not equipped/not available/not in use
- (1) No automatic belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): _____

- (6) Broken retractor
- (7) Combination of above (specify): _____
- (8) Other automatic belt failure (specify): _____

- (9) Unknown

UPDATE CANDIDATE? NO [☒] YES []OCCUPANT INJURY FORM INCLUDED WITH INITIAL SUBMISSION? NO [] YES [☒]

*** STOP HERE ***
 IF THERE ARE NO RECORDED INJURIES
 (I.E., OA43 = 00,97,99)



U.S. Department of Transportation
National Highway Traffic Safety
Administration

OCCUPANT INJURY FORM

Form Approved
O.M.B. No. 2127-0021
NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~ _____

3. Vehicle Number 01

2. Case Number—~~Stratum~~ 91-12

4. Occupant Number 01

INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

	Source of Injury Data	Body Region	O.I.C.—A.I.S.				Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion No.
			Aspect	Lesion	System Organ	A.I.S. Severity				
1st	5. <u>L</u>	6. <u>M</u>	7. <u>C</u>	8. <u>R</u>	9. <u>A</u>	10. <u>5</u>	11. <u>45/04</u>	12. <u>1</u>	13. <u>1</u>	14. <u>00</u>
2nd	15. <u>1</u>	16. <u>C</u>	17. <u>B</u>	18. <u>E</u>	19. <u>S</u>	20. <u>4</u>	21. <u>45/04</u>	22. <u>1</u>	23. <u>1</u>	24. <u>00</u>
3rd	25. <u>1</u>	26. <u>M</u>	27. <u>L</u>	28. <u>R</u>	29. <u>Q</u>	30. <u>3</u>	31. <u>45/04</u>	32. <u>1</u>	33. <u>1</u>	34. <u>00</u>
4th	35. <u>1</u>	36. <u>C</u>	37. <u>C</u>	38. <u>C</u>	39. <u>H</u>	40. <u>3</u>	41. <u>40</u>	42. <u>1</u>	43. <u>1</u>	44. <u>00</u>
5th	45. <u>1</u>	46. <u>H</u>	47. <u>U</u>	48. <u>U</u>	49. <u>B</u>	50. <u>3</u>	51. <u>40</u>	52. <u>1</u>	53. <u>2</u>	54. <u>00</u>
6th	55. <u>1</u>	56. <u>E</u>	57. <u>L</u>	58. <u>C</u>	59. <u>0</u>	60. <u>1</u>	61. <u>45</u>	62. <u>1</u>	63. <u>1</u>	64. <u>00</u>
7th	65. <u>1</u>	66. <u>E</u>	67. <u>R</u>	68. <u>C</u>	69. <u>0</u>	70. <u>1</u>	71. <u>45</u>	72. <u>1</u>	73. <u>1</u>	74. <u>00</u>
8th	75. <u>1</u>	76. <u>S</u>	77. <u>L</u>	78. <u>C</u>	79. <u>I</u>	80. <u>1</u>	81. <u>41</u>	82. <u>1</u>	83. <u>1</u>	84. <u>00</u>
9th	85. <u>1</u>	86. <u>F</u>	87. <u>I</u>	88. <u>A</u>	89. <u>I</u>	90. <u>1</u>	91. <u>45</u>	92. <u>1</u>	93. <u>1</u>	94. <u>00</u>
10th	95. <u>1</u>	96. <u>F</u>	97. <u>I</u>	98. <u>C</u>	99. <u>I</u>	100. <u>1</u>	101. <u>45</u>	102. <u>1</u>	103. <u>1</u>	104. <u>00</u>

OCCUPANT INJURY DATA

	Source of Injury Data	O.I.C.—A.I.S.					Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion No.
		Body Region	Aspect	Lesion	System Organ	A.I.S. Severity				
11th	<u>1</u>	<u>N</u>	<u>A</u>	<u>A</u>	<u>I</u>	<u>1</u>	<u>45</u>	<u>1</u>	<u>1</u>	<u>00</u>
12th	<u>1</u>	<u>N</u>	<u>L</u>	<u>A</u>	<u>I</u>	<u>1</u>	<u>41</u>	<u>1</u>	<u>1</u>	<u>00</u>
13th	<u>1</u>	<u>N</u>	<u>L</u>	<u>C</u>	<u>I</u>	<u>1</u>	<u>41</u>	<u>1</u>	<u>1</u>	<u>00</u>
14th	<u>1</u>	<u>N</u>	<u>A</u>	<u>C</u>	<u>I</u>	<u>1</u>	<u>45</u>	<u>1</u>	<u>1</u>	<u>00</u>
15th	<u>1</u>	<u>C</u>	<u>L</u>	<u>C</u>	<u>I</u>	<u>1</u>	<u>45</u>	<u>1</u>	<u>1</u>	<u>00</u>
16th	<u>1</u>	<u>C</u>	<u>R</u>	<u>C</u>	<u>I</u>	<u>1</u>	<u>45</u>	<u>1</u>	<u>1</u>	<u>00</u>
17th	<u>1</u>	<u>K</u>	<u>R</u>	<u>L</u>	<u>I</u>	<u>1</u>	<u>13</u>	<u>1</u>	<u>1</u>	<u>00</u>
18th	<u>1</u>	<u>K</u>	<u>R</u>	<u>L</u>	<u>I</u>	<u>1</u>	<u>13</u>	<u>1</u>	<u>1</u>	<u>00</u>
19th	<u>1</u>	<u>K</u>	<u>L</u>	<u>C</u>	<u>I</u>	<u>1</u>	<u>13</u>	<u>1</u>	<u>1</u>	<u>00</u>
20th	—	—	—	—	—	—	—	—	—	—
21st	—	—	—	—	—	—	—	—	—	—
22nd	—	—	—	—	—	—	—	—	—	—
23rd	—	—	—	—	—	—	—	—	—	—

Abrasions with contusion to the left side of the neck (AIS-1), shoulder belt webbing

Extensive subarachnoid hemorrhage (AIS-3), seat back, hyperextension of head

Contusion of the right anterior neck (AIS-1), air bag

Ecchymosis of the posterior aspect of the heart (AIS-3), seat back

Contusions over the outer area of both breasts (AIS-1), air bag

4 cm and 2 cm lacerations of the right knee (AIS-1), knee bolster

Contusions over both eyelids (AIS-1), air bag

Abrasion with contusion to the underside of the chin (AIS-1), air bag

Abrasions of the anterior neck (AIS-1), air bag

Contusion over the left anterior shoulder (AIS-1), shoulder belt webbing

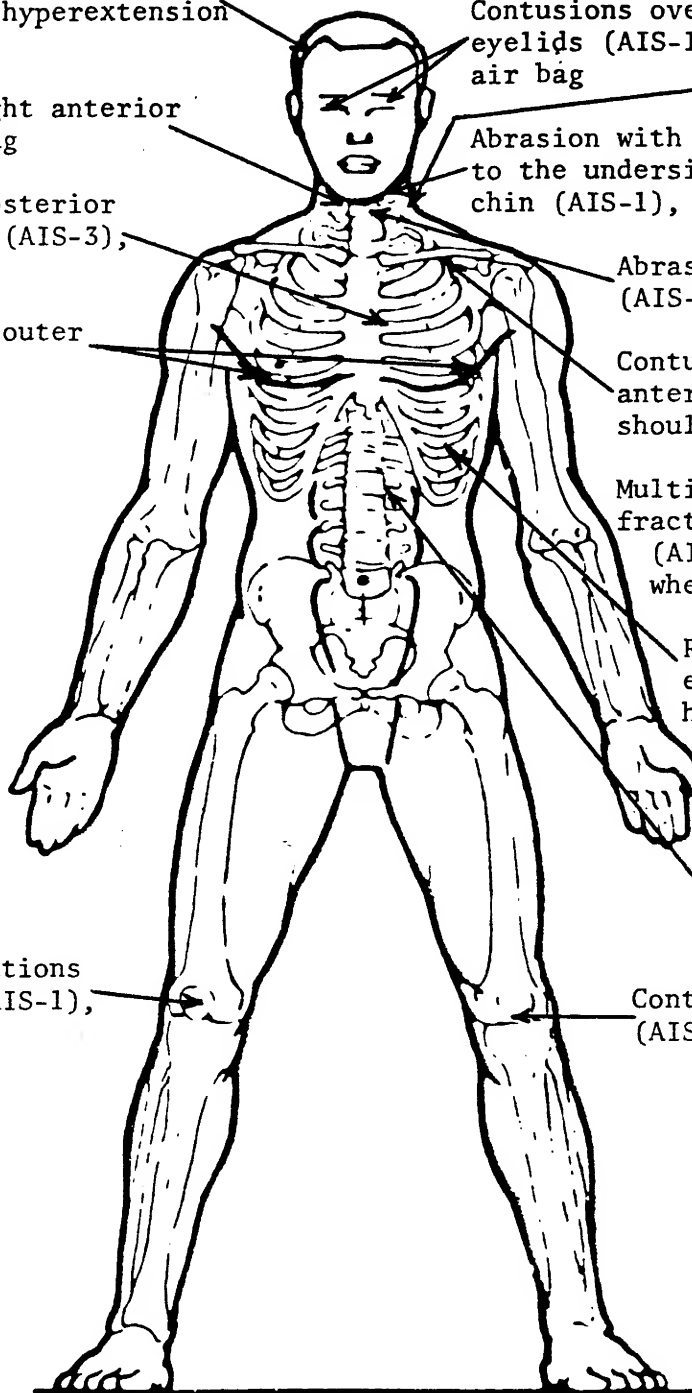
Multiple bilateral rib fractures with pulmonary edema (AIS-4), air bag/steering wheel loading

Ruptured spleen with extensive retroperitoneal hemorrhage (AIS-3), air bag/steering wheel loading

Rupture of the abdominal aorta (AIS-5), air bag/steering wheel loading

Contusion over the left knee (AIS-1), knee bolster

AGE 36
SEX Female
WT. 104-120 lbs
HT. 63"



SOURCE OF INJURY DATA

OFFICIAL

- (1) Autopsy records with or without hospital medical records
- (2) Hospital medical records other than emergency room (eg. discharge summary)
- (3) Emergency room records only (including associated X-rays or other lab reports)
- (4) Private physician, walk-in or emergency clinic

UNOFFICIAL

- (5) Lay coroner report
- (6) E.M.S. personnel
- (7) Interviewee
- (8) Other source (specify): _____
- (9) Police

INJURY SOURCE

FRONT

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add-on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): _____

LEFT SIDE

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): _____
- (25) Left side window glass or frame

- (26) Left side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail

- (27) Other left side object (specify): _____

RIGHT SIDE

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): _____

- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, roof side rail
- (37) Other right side object (specify): _____

INTERIOR

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): _____

- (44) Head restraint system
- (45) Air bag
- (46) Other occupants (specify): _____

- (47) Interior loose objects
- (48) Child safety seat (specify): _____

- (49) Other interior object (specify): _____

ROOF

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

FLOOR

- (56) Floor including toe pan
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

REAR

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): _____

EXTERIOR OF OCCUPANT'S VEHICLE

- (65) Hood
- (66) Outside hardware (e.g., outside mirror, antenna)
- (67) Other exterior surface or tires (specify): _____

- (68) Unknown exterior objects

EXTERIOR OF OTHER MOTOR VEHICLE

- (70) Front bumper
- (71) Hood edge
- (72) Other front of vehicle (specify): _____

- (73) Hood
- (74) Hood ornament
- (75) Windshield, roof rail, A-pillar
- (76) Side surface
- (77) Side mirrors
- (78) Other side protrusions (specify): _____

- (79) Rear surface
- (80) Undercarriage
- (81) Tires and wheels
- (82) Other exterior of other motor vehicle (specify): _____

- (83) Unknown exterior of other motor vehicle

OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT

- (84) Ground
- (85) Other vehicle or object (specify): _____

- (86) Unknown vehicle or object

NONCONTACT INJURY

- (90) Fire in vehicle
- (91) Flying glass
- (92) Other noncontact injury source (specify): _____

- (97) Injured, unknown source

INJURY SOURCE CONFIDENCE LEVEL

- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

DIRECT/INDIRECT INJURY

- (1) Direct contact injury
- (2) Indirect contact injury
- (3) Noncontact injury
- (7) Injured, unknown source

OCCUPANT INJURY CLASSIFICATION

O.I.C. Body Region

- (M) Abdomen
- (Q) Ankle-foot
- (A) Arm (upper)
- (B) Back-thoracolumbar spine
- (C) Chest
- (E) Elbow
- (F) Face
- (R) Forearm
- (H) Head-skull
- (U) Injured, unknown region
- (K) Knee
- (L) Leg (lower)
- (Y) Lower limb(s) (whole or unknown part)
- (N) Neck-cervical spine
- (P) Pelvic-hip
- (S) Shoulder
- (T) Thigh
- (X) Upper limb(s) (whole or unknown part)
- (O) Whole body

(W) Wrist-hand

Aspect of Injury

- (A) Anterior-front
- (B) Bilateral (rib fracture only)
- (C) Central
- (I) Inferior-lower
- (U) Injured, unknown aspect
- (L) Left
- (P) Posterior-back
- (R) Right
- (S) Superior-upper
- (W) Whole region

Lesion

- (A) Abrasion
- (M) Amputation
- (V) Avulsion
- (B) Burn
- (K) Concussion
- (C) Contusion
- (N) Crush

(G) Detachment, separation

- (D) Dislocation
- (F) Fracture
- (Z) Fracture and dislocation
- (U) Injured, unknown lesion
- (L) Laceration
- (O) Other
- (P) Perforation, puncture
- (R) Rupture
- (S) Sprain
- (T) Strain
- (E) Total severance, transection

System/Organ

- (W) All systems in region
- (A) Arteries-veins
- (B) Brain
- (D) Digestive
- (E) Ears
- (O) Eye
- (H) Heart
- (U) Injured, unknown system

(I) Integumentary

- (J) Joints
- (K) Kidneys
- (L) Liver
- (M) Muscles
- (N) Nervous system
- (P) Pulmonary-lungs
- (R) Respiratory
- (S) Skeletal
- (C) Spinal cord
- (Q) Spleen
- (T) Thyroid, other endocrine gland
- (G) Urogenital
- (V) Vertebrae

Abbreviated Injury Scale

- (1) Minor injury
- (2) Moderate injury
- (3) Serious injury
- (4) Severe injury
- (5) Critical injury
- (6) Maximum (untreatable)
- (7) Injured, unknown severity